MARCH, 1962 • 35¢

AMERICAN Cinematographer

Magazine Of Motion Picture Photography And Production Techniques

IN THIS ISSUE

• AUTOMATION IN ANIMATION • "FIRST PERSON" CAMERA TECHNIQUE
• MOVIE MAGIC FOR "THE MAGIC SWORD"

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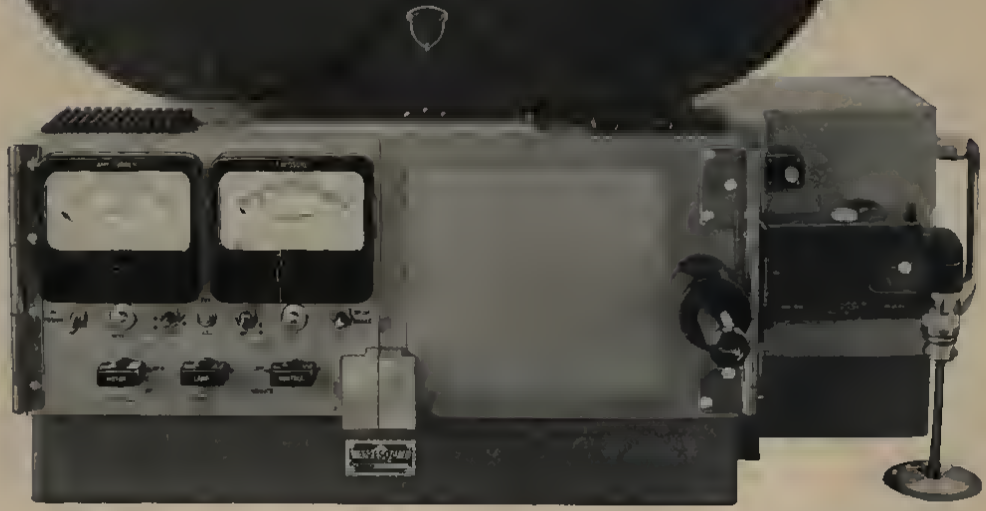

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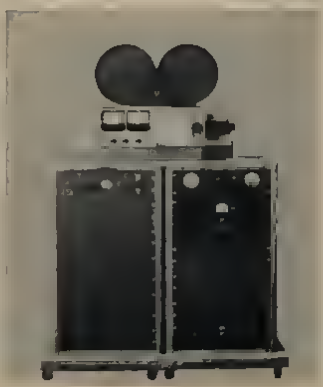

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March, 1962 Vol. 43, No. 3

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ON THE COVER

SHOOTING A SCENE on location for The Andy Griffith Show Directing the photography is Sid Hickox ASC standing in doorway of sound recording cab in upper right of photo Camera is focused on Griffith and two fishing pals in rowboat Two reflectors and a Brute in background furnish fill light to balance the sunlight illumination This popular television show, now in its second year has been photographed entirely by Hickox since its debut

AMERICAN CINEMATOGRAPHER established 1920, is published monthly by the A S C Agency, Inc 1782 N Orange Dr., Hollywood 28, Calif SUBSCRIPTIONS, United States and Canada, $4.00 per year, Foreign, including Pan American Union, $5.00 per year Single copies 35 cents, Back numbers 45 cents, foreign single copies, 45 cents, Back numbers, 60 cents Advertising rates on application Copyright 1962 by A S C. Agency, Inc. Second-class postage paid at Los Angeles, California

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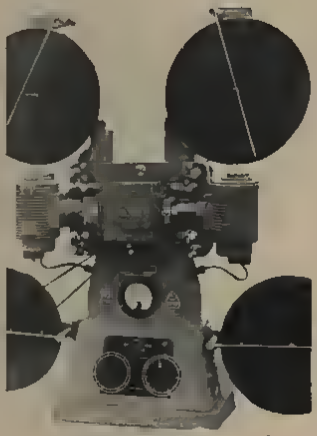

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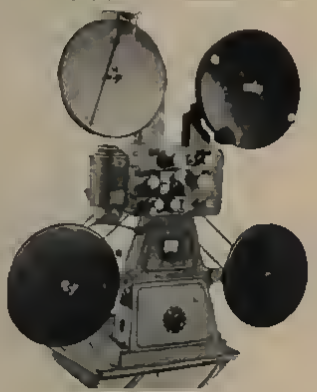

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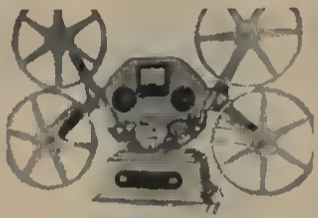

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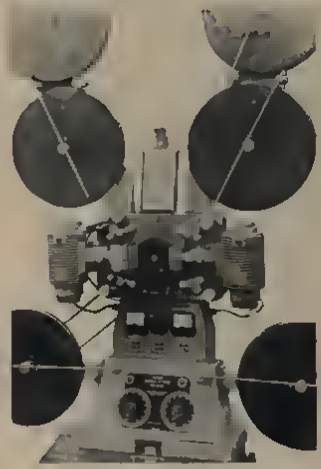

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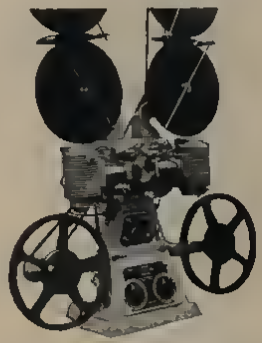

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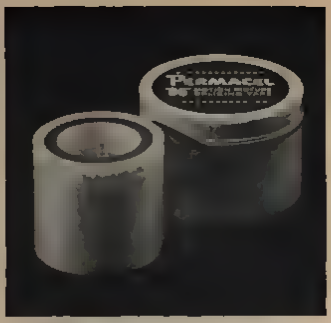

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INDUSTRY NEWS

News briefs of industry activities, products and progress

Cinematography Awards

Daniel Fapp, ASC; Oswald Morris, John Wilcox, Jack Cardiff, and Geoffrey Unsworth; and Franz Planer, ASC, Milton Krasner, ASC, and Manuel Berenguer, ASC, have been cited by *The Film Daily*, New York industry trade paper, for The Best Photography of 1961 in its annual "Filmdom's Famous Fives Awards."

Fapp was cited for "West Side Story," also nominated for an Academy Award for photography this year (see story elsewhere in this issue). Oswald Morris and John Wilcox were presented with the FFF award for photography of "The Guns of Navarone." Jack Cardiff's citation was for the photography of "Fanny." Franz Planer, Milton Krasner, and Manuel Berenguer—all members of the A.S.C.—were cited for "King of Kings," which they co-photographed. Geoffrey Unsworth photographed "The World of Suzie Wong."

"'West Side Story,' photographed by Daniel Fapp, registered an easy win as the best photographed picture of 1961," *Film Daily* reported. "There was a close finish for second place, but it finally went to 'The Guns of Navarone.' The third choice was 'Fanny'." "The World of Suzie Wong" and "King of Kings" took fourth and fifth place in the FFF awards.

Krasner, Planer, Cardiff and Morris have previously been winners of Filmdom's Famous Fives awards. Milton Krasner won a FFF award in 1954 for "Three Coins in the Fountain." Franz Planer received the FFF award in 1957 for "The Pride and the Passion," and again in 1958 for "The Big Country." Cardiff is another three-time winner, having been honored in 1958 for "The Vikings," and in 1956 for "War and Peace." Morris previously has won two FFF awards — in 1953 for "Moulin Rouge" and in 1956 for "Moby Dick."

All of the finalists in the "Best Photography" category of *The Film Daily* awards this year were filmed in color.

In addition to Photography, the FFF awards are annually presented for Best Performances by Male Stars, Best Performances by Female Stars, Best Performances by Supporting Actors, Best Performances by Supporting Actresses, Best Juvenile Actors and Actresses, "Finds" of the Year, Year's Outstanding Directors, and Best Screenplays of The Year.

Selections are the result of *The Film Daily's* annual poll of the nation's newspaper and magazine movie critics and reviewers and TV commentators on movies.

•

New Cinerama Format

In a joint venture sponsored by Cinerama, The Boeing Company, and the U.S. Science Exhibit of the U.S. Department of Commerce, a unique 12-minute space-voyage film being produced by Cinerama will be shown at the Century 21 Exposition Spacearium in Seattle, Washington, starting April 21, 1962.

To photograph the picture, which will be projected onto a 75-foot diameter, 8,000 square foot hemispherical screen, a new super-wide-angle 70mm motion picture camera has been designed and manufactured for Cinerama by Benson-Lehner Corporation, Santa

Continued On Next Page

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INDUSTRY NEWS

Continued From Preceding Page

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New Eastman Color Negative

Donald E. Hyndman, manager of Eastman Kodak's motion picture film department, visiting Hollywood last month announced the company expects to have its improved Eastman Color Negative Film for professional motion pictures generally available the latter part of 1962. Supplies of the new negative are currently undergoing trade tests in Hollywood and New York, and demonstrations and complete details of the improved color stock are to be presented soon before members of the American Society of Cinematographers, and also to the Society of Motion Picture and Television Engineers at its spring meeting in Los Angeles in April.

The improved color negative is said to have less grain and better color quality. Hyndman also announced that trade tests are being conducted on the company's improved professional motion picture Color Print Film, which also is to be made available during the latter part of this year. A gain in speed and further improvement in color quality and definition is claimed for the film.

•

French 16mm SS-sound Camera

The French camera manufacturer, Debrie, recently introduced its new Sinmor 16mm magnetic sound single-system camera, which has been designed so that it can be used without a tripod, with the magazine resting on the operator's shoulder to give extra support—similar to the Mitchell 35mm Reflex camera.

NEWS FROM MITCHELL CAMERA

7 ways to make more films at lower cost. *It is remarkable but true...as proven by the photographs on this page... that a single Mitchell camera can be used for a virtually unlimited range of film making assignments. No other camera today can meet such a broad range of exacting film making. The versatile speed of the Mitchell, ranging from stop motion to a high speed of 128 frames per second, plus its exclusive time-saving operating features are but a few of the reasons for its wide use. As seen on this page, the Mitchell is the only 16mm camera designed for complete range cinematography of fine films.*

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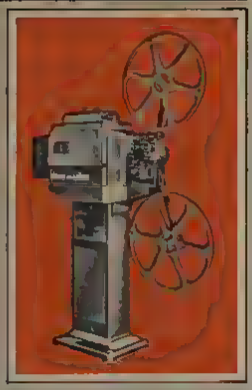

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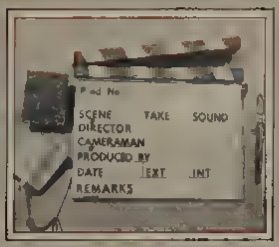

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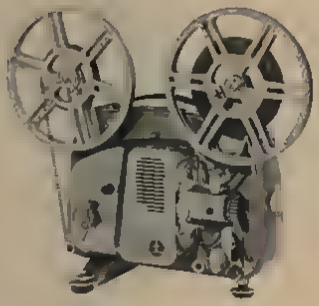

Only the Bolex 18-5 shows any 8mm film in slow motion! Flip the switch and change magically from 18 fps to 5 fps "Living Stills" The Bolex 18-5 lets you project your films almost four times slower—study every detail This slower projection is also an aid in editing and focusing and saves you film, since you can shoot less footage of inanimate subjects Film capacity is 400 feet

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Q & A

Technical Questions and Answers

Q.—*I have two questions 1) Can Kodachrome Type A, filmed with an Auricon with single system sound, be duplicated without loss of fidelity of the lip-sync voice track? We will need a duplicate of this film, as the original may be required later on for making additional prints*

2) The production, for which we shall need the above mentioned section in Kodachrome, is being shot with Ektachrome We need the lip-sync section, as described above, but hesitate to shoot it in Ektachrome in view of recent article by Darrin Scot in which he describes results obtained by an aircraft company film unit shooting Ektachrome with an Auricon with variable-area galvanometer Therefore, can the lip sync scene shot on Type A Kodachrome be printed via Ektachrome without loss of fidelity?

We intend to narrate, using music in background We hope to avoid using the original Auricon lip-sync in screening and handling to safeguard against scratching the film, etc — W E E. Portsmouth, Ohio.

A.—In making single system sound tracks with either Kodachrome or Ektachrome film, a positive track is obtained—in the case of regular Kodachrome a silver sulfide track, and in the case of Ektachrome Commercial, a dye track Since most quality color duplicating films require that a black-and-white sound negative track be printed to give a positive track on the release print, it is desirable to convert the positive track obtained from sound on-film original to such a negative track This is commonly done by re-recording onto a black and white negative sound recording stock

To keep the portion filmed in lip-sync from sounding significantly different from the rest of the sound track, it would almost be imperative that this technique be followed, since it is assumed that the greater portion of the sound track will be made using the typical black and white sound negative for final printing

In the final analysis, the stringency of the requirements for your particular sound track would determine whether the sound-on-film system as practiced by the aircraft company film unit you mention, is satisfactory; and certainly tests should be made to establish its acceptability to your needs.

Q.—*I'm preparing to shoot my first color commercial in 35mm, having worked entirely with 16mm during the past eight years My question is regarding the exposure I should use as the subject of this color film will be Negroes. When shooting still pictures of them, it is my practice to vary my exposure in order to better reproduce detail in faces.*

In shooting Eastman Color Negative and using a Lumasix meter for incident light readings what exposure adjustments would you recommend? The Negroes used will be mostly of light complexion and there will be no scenes in which both Negroes and whites will appear.

The production is for theatrical release Therefore, in your opinion is an Eyema Q camera in good condition with good lenses adequate for making silent commercials for theatrical release? Would the results be superior to that obtained with a Bolex and Commercial Ektachrome film, and blowing this film up to 35mm color? If I make tests, using an 18 per cent gray card in the scene, can you give me a density reading for the negative print for proper exposure for a normal scene and possibly for the type of scene described in the paragraph above?— B M , Birmingham, Alabama

A.—There are no special recommendations for exposure of Eastman Color Negative when the subjects to be

Continued on Next Page

GOT A PROBLEM?

Need professional advice on a picture-making problem, about equipment, film or cinematography? Reader's questions are invited and will be answered by mail when accompanied by a stamped, addressed envelope for reply Questions and answers considered of general interest to other readers will be published here each month

Address your questions to the "Question & Answer Editor," American Cinematographer, P.O. Box 2230, Hollywood 28, Calif

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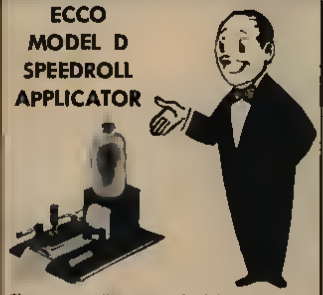

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QUESTIONS & ANSWERS

Continued from Preceding Page

photographed are Negroes. Any small adjustments in color rendition which might be desirable can easily be made in the production of the print from the original negative.

In answer to your question about using the Eyemo Q camera, we can see no reason why satisfactory commercials cannot be made with this equipment. As to whether this camera could produce a result markedly superior to that rendered by using a Bolex and Ektachrome Commercial Film and having a blowup to 35mm made, this would depend to some extent on the abilities of the laboratory handling this latter job, but even at best the blowup should probably be less desirable.

Trying to stipulate the density readings for the color negative and print when using an 18 per cent reflectance card in the scene, is very involved because of the problem of the manner in which the measurements of density are made. It would be necessary that the density to specific calibrated filters of red, green, and blue transmission be used. Stipulation in terms of visual neutral density filter would be meaningless and could perhaps confuse more than help the issue; and without the required set of filters mentioned earlier, correlation of the manufacturer's readings to your own would be different if not impossible. The best solution to the problem would be to use the manufacturer's exposure recommendations for the film and expose the card to the light levels required to meet this exposure index.

A print from the properly-exposed negative can best be judged by projection under specified conditions to give what appears to be the most acceptable rendition of the 18 per cent card.

Q.—*After reading the article "Choosing a 16mm Film," in your December issue, I am doubtful as to the type of raw stock I should use on a production I am about to start. The production is to be shot in 16mm black and white. Most of it will be on location and about 25 per cent of it will have lip-sync sound. The balance will be post recorded.*

Of the total footage, I plan to edit three 15 minute presentations, making one release print of each, perhaps more later. Also, from the same original footage I must edit ten individual 1-minute TV spots with sound, plus five without. Approximately eight prints are to be made of each spot.

What film stock should I use? Inasmuch as I must do the editing and after reading the above-mentioned article, I'm not too eager to use negative stock. However, I'd like to get as much quality as possible.

While preparing the A & B rolls, the negatives are bound to pick up defects which, quoting the article, "... will show in the release print." I do not like to cut the original unless the work print is timed and ready to go. So, should I use reversal stock and have the lab make a dupe and then a work print from that, or make a reversal dupe work print? — A. H., Tucson, Arizona.

A.—It is suggested that, if this is a low budget undertaking, that you shoot Plus-X reversal, conform the A&B rolls for zero cuts in order that the original scenes need not be reduced to scene length, and have your laboratory make a 35/32mm dupe negative for making the release prints. You can then recut the A&B rolls to make the TV spots and also conform those A&B rolls from the original reversal, and end up with a 35/32mm dupe negative for printing. You will, of course, need an A-wind track negative for printing with the dupe negatives.

Q.—*I want to do a split-screen shot of two people holding a telephone conversation. If I record both conversations on tape, then photograph one person on the left half of the firm, then the other person on the right side of another length of film—with each person lipping the dialog on playback as he is photographed — then split and tape splice the two halves of film to make a composite strip, will this work?* —R. M., Newark, N. J.

A.—A better method is to first shoot one subject with half of the frame masked off, then cap the lens and wind back film in camera, reverse the mask (matt) and shoot second player on the other half of the film (left unexposed in the first pass, because of the mask.) The mask must be accurately aligned each time so there will be no line of demarcation. Lacking a mask slot or matte box, a simple titler can be used to hold mask. ■

YOUR QUESTIONS

Only questions on technical problems can be answered in this column. Kindly do not write asking for information such as names and addresses of industry personnel, who photographed certain pictures, etc.

Also—please enclose with your letter a stamped, addressed envelope if reply by mail is desired.

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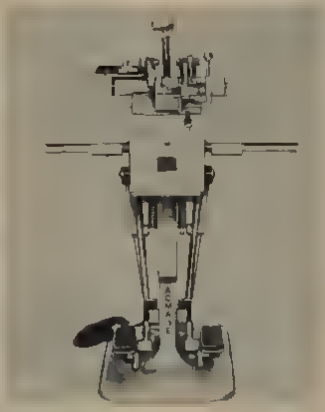
WHAT'S NEW

IN EQUIPMENT, ACCESSORIES, SERVICES



Hot Splicer

The Acmade Hot Splicer is available in a combination 16/35mm pedestal mounted, foot operated model from Florman & Babb, Inc., 68 West 45th St., New York 36, N.Y. Splicer features include stainless steel cutter blades with tungsten-carbide inserts, heater unit, top light, inspection light, cement bottle and brush. Scraper block is supplied, also a scraper block setting jig and rubber covered support shelf. Complete unit is gray hammer-enamel finish, metal parts are chromed. Price is $1,495.00.

Titler-Effects Kit

S.O.S. Photo-Cine-Optics, Inc., announces a new titler and special effects kit for 16mm and 35mm cameras, such as Bolex, Cine Special, E-K K-100, B&H Filmo, and B&H Eyemo. Titler features both horizontal and vertical adjustment of camera carriage and keyway, an alignment attachment for maintaining optical axis on title board center, and built-in distance scale. Camera table is adjustable for N-E-W-S positions. A revolving table provides for miniatures, etc.

Other features include dual lamp mounts and reflectors, facility for making climbing and running titles, and a selection of animation accessories. Prices range from $199.50 to $395.00, depending on equipment and accessories selected.

550-Watt Superflood

Sylvania Electric Products, Inc., New York, announces a new 550-watt superflood photolamp. Designed to meet needs of amateur movie makers for more powerful and efficient illumination source for indoor filming, lamp also is ideally suited to professional lighting needs where small illumination source is required.

The lamp contour is conventional R-40 bulb and produces light beam of 18,000 center beam candlepower with color temperature of 3400° K and a coverage of 37 degrees. Rated life of bulb is 10 hours. Price is $3.00.

Foot-candle Meter

A three-ounce, pocket-size light meter which measures light levels up to 5000 footcandles has been announced by General Electric Company. Designated "Type 213," meter is cosine- and color-corrected with its selenium cell responding to white or colored

Continued on Page 147

The One-Stop Source Of Supply

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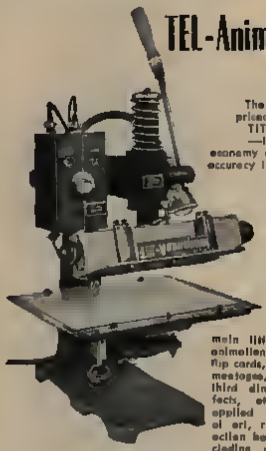

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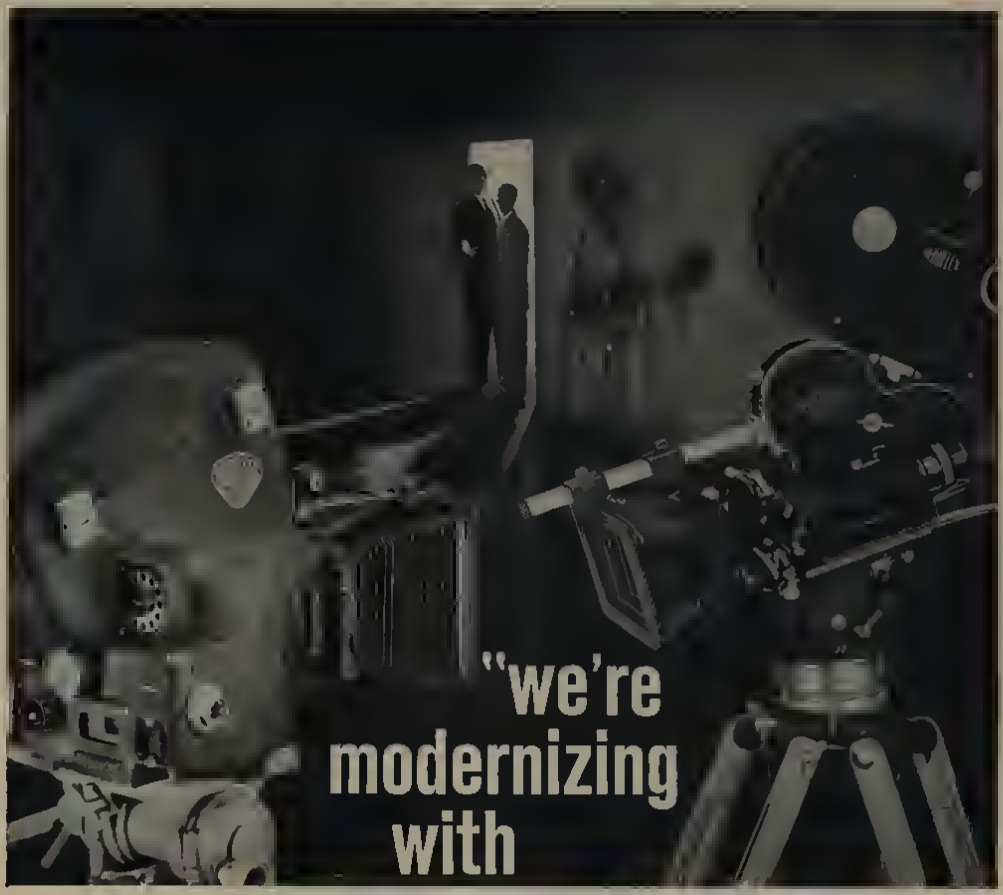

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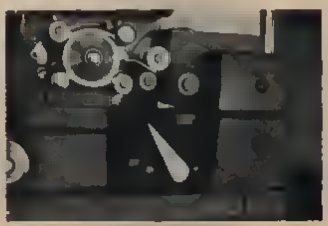
WHAT'S NEW

Continued from Page 144

light as does the human eye. Besides measuring footcandle levels, meter can be used to evaluate brightness of surfaces in terms of foot lamberts, to determine the relative transmission and reflection factors of materials, or as a simple photographic exposure meter. Price is $19.50.

ColorTran Fill Light

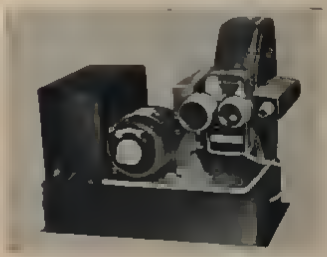
The ColorTran Super-Eighty is a new lightweight floodlight employing an R-80 1500-watt reflector lamp. When powered by a ColorTran Converter, the Super-Eighty will illuminate a 7 ft. circle area with 940 footcandles of light at a distance of ten feet from subject. Unit can be used on conventional stands, Gaffer-Grips, or hung from stage flat fittings. List price is $56.00, less R-80 lamp. ColorTran Industries, Inc., 630 So. Flower St., Burbank, Calif.



Sound Conversion Units

Two easily-installed magnetic sound conversion units—one for playback only, the other for record and playback — for converting B&H Model 540 16mm optical-sound projectors for magnetic, is announced by Gregory Magnetic Industries, Inc., 1167 N.E. 24th St., Fort Lauderdale, Florida.

Units scan the sound track 28 frames ahead of the picture. Frequency response conforms to SMPTE standards. No change of film threading is involved. Playback only unit lists for $99.50; the record and playback unit, $185.00. Units are available also for other 16mm optical sound projectors.



Automatic Camera Operator

The Lafayette Automatic Camera System, pictured above, automatically photographs any desired subject or area at pre-determined intervals or when triggered manually. Designed to monitor warehouse and storage areas where pilferage is a problem, it is also adaptable to a wide range of industrial and scientific filming needs such as instrument and traffic monitoring, biological or construction progress reports, and stop-motion, time and motion, or memo motion studies.

System operates with 16mm and some 8mm cameras to provide any number of photographs from 1-frame per day up to 3,000 frames per minute, according to time intervals and preset. System may also be triggered by electric eye or mechanical means. Lafayette Instrument Co., P.O. Box 57, Lafayette, Indiana.

Helicopter Service

Helicopter service for photographers and film producers is provided in the Southern California area by Briles Helicopter Service, 1415 East Grand Avenue, El Segundo, Calif. Available are either Bell 47G 3-place or 47J 4-place helicopters. Rates are $50.00 and $70.00 per hour respectively. Additionally there are standby charges and charges for alteration of craft for specific applications. •

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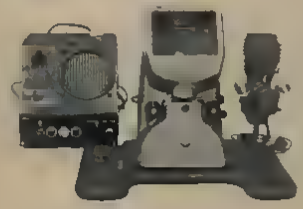

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BEHIND THE CAMERAS

WHAT THE INDUSTRY'S CAMERAMEN ARE SHOOTING LAST MONTH

BY MARION HOUGHINS

NOTE: Asterisks following titles indicate television film productions.

BILTMORE STUDIOS — N Y

JACK PRIESTLY, "Naked City"* (Screen Gems)

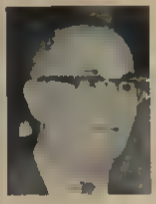
BIOGRAPH STUDIOS — New York

GEORGE STOETZEL, ASC, 'Car 54 Where Are You?"*.

CASCADE PICTURES

ROY SEAWRIGHT, Commercials*

HENRY FREULICH ASC, Commercials*



PHIL TANNURA A.S.C

Following windup of shooting assignment on the "Shannon" TV film series at Columbia Studios, Phil, wife and daughter made jet trip to Hawaii and Japan

COLUMBIA STUDIOS

IRVING LILIENAN, "Safe at Home" (Shooting in Fla.) with Roger Maris and Mickey Mantle. Walter Doniger, director

HENRY FREULICH, ASC, "Tom Sawyer"* (pilot)

GORDON AVIL, ASC, "Don't Knock the Twist" with Chubby Checker and Lang Jeffries. Oscar Rudolph, director

JACK MARTA, ROBERT WYCKOFF "Route 66"*

BOB HUKE, "The War Lover" (Arthur Hornblow Prod., shooting in England) with Steve McQueen and Robert Wagner. Philip Leacock, director.

CHARLES WELSORN, "Dennis the Menace"*

FRED GATELY, ASC, "Hazel"*.

WILLIAM WHITLEY, ASC, "Shannon"*

GERT ANDERSEN, ASC, "Donna Reed Show"*

FRED YOUNG, "Lawrence of Arabia" (Super P'Vision, Eastman color, Horizon Pictures (GB), Columbia release, shooting in Spain) with Alec Guinness and Anthony Quinn. David Lean, director.

DESILU—Cahuenga Studios

STU HICKOX, ASC, "The Andy Griffith Show"*, "Victor Borge"* (pilot)

ROBERT DE GRASSE, ASC, "Dick VanDyke Show"*. "Danny Thomas Show"*.

HENRY CRONJAGER, "Joey Bishop Show"*

DESILU—Culver City

CHARLES STAUMER, "The Untouchables"*.

LUCIEN ANDRIOT, ASC, "Kentucky Kid"* (pilot).

LOTHROP WORTH, ASC, "The Real McCoys"*.

DESILU—Gower Studios

EDWARD FITZGERALD, ASC, ROBERT PITTACK, ASC, FRANK PHILLIPS, "Victor Borge"* pilot)

LUCIEN ANDRIOT, ASC, "Big Brain"*

CHARLES STAUMER, "Fair Exchange"* (pilot)

FRANK CARSON, "Window on Main Street*"

CHARLES VAN ENGER, ASC, "Lassie"*

TED VOIGHTLANDER, "Ben Casey"*

ROBERT PLANCK, ASC, "My Three Sons"*.

FILMWAYS STUDIOS—New York

MORRIS HARTZBAND "The Defenders"* (CBS) Boris Sagal and Buzz Kulick, directors.

FOX STUDIOS—New York

ARTHUR ORNITZ Twist Featurette (Vanguard Prods.)

FOX WESTERN AVENUE

ROBERT HAUSER 'Bus Stop"*

RICHARD RAWLINGS, "Margie"*

GENERAL SERVICE STUDIOS

ROBERT MORENO, 'Advntures of Ozzie & Harriet"*

ROBERT HAGEN, "Perry Mason"*.

ARCH DALZELL, "Mister Ed"*

HARRY WOLF, "Hennessey*.

GOLDWYN STUDIOS

MEREDITH NICHOLSON, "The New Breed"*

TED MCCORD ASC, "Two for the Seesaw' (Mirisch Robert Wise, Seven Arts Prod., P Vision) with Robert Mitchum and Shirley MacLaine. Robert Wise, director

LIONEL LINDON ASC, "The Manchurian Candidate" (M. C. Prods. with Frank Sinatra and Laurence Harvey. John Franken heimer, director

INDEPENDENT

LLOYD KNECHTEL, ASC, commercial*.

CARL KAYSEN, "No Man is an Island" (Goldcoast Prod. for U I release, shooting in the Philippine Is.) with Jeffrey Hunter. Richard Goldstone and John Monks, Jr., producer directors.

WILLIAM TRIONO, "The Slime People" (Hutton-Robertson Prods.) with Robert Hutton and Less Tremayne. Robert Hutton, director.

ALEX PHILLIPS, "The Forsaken Garden" (Color, shooting in Mexico City) with Merle Oberon and Steve Cochran. Richard Rush, director

SOL NEGRIN, MIKE ZINGALE, BOB DOWNEY, "Candid Camera"*

OZZIE MORRIS, "Term of Trial" (Remus Prod. for Warners Release, shooting in Dublin) with Laurence Olivier and Simone Signoret. Peter Glenville, director

JOE MACDONALD, ASC, "Taras Bulba" (Harold Hecht Prod. for UA release, shooting in Salta, Argentina) with Tony Curtis and Yul Brynner. J. Lee Thompson, director

Continued on Page 152

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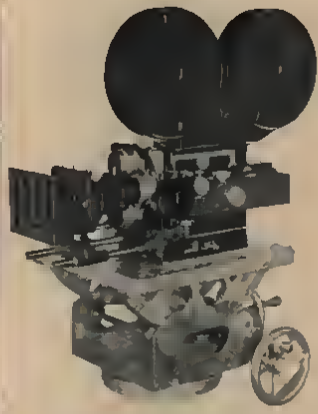

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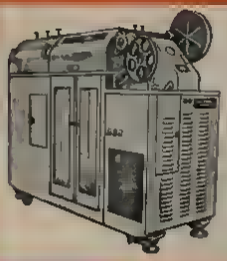
WRITE FOR COMPLETE BULLETIN OF THIS MONTH'S BARGAIN SPECIALS



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Some with refrigeration, recirculation pump variable speed etc

MODEL 1 16mm neg/pos/rev needs overhaul **$695**

MODEL K-3 16mm neg/pos/rev serviceable **$1295**

MODEL 22B 16mm neg/pos 45 FPM serviceable **$1995**

LABMASTER 16mm neg/pos late model serviceable **$2250**

MODEL HB 16mm rev/pos/neg **$2495**

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Mole-Richardson late model list $2206 like new **$1395**

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ACME 7' Animation Stand sliding pegs B & H 35mm camera Acme step motion motor Value $12 500 Excellent condition **$3795**

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Standard with newsreelmen everywhere Proven background of 35 successful years operation in every climate Includes 4 lens turret 12V DC motor viewfinder tachometer viewing counter belt take up camera carrying case $6580 originally Serviceable **$1495** Reconditioned **$2495**

COMPLETE OUTFIT including 2 1000' magazines and 4 matched lenses Reconditioned less sound **$2995**

COMPLETE SOUND OUTFIT with RCA Galvanometer recording amplifier and fabric blimp Recond **$3995**

OTHER Extra Low Priced SPECIALS

★CAMERAS, 16MM

BELL & HOWELL 70H w/400' magazine 115V AC/DC Motor pos finder B & L 2" Cinemascope lens and deer sun shade adapter $1250 value excellent condition **$795**

EK CINE SPECIAL II w/100' magazine Par Adapter and beam splitter excellent condition **$795**

FAMOUS BOLEX H16 3 fast lenses tri focal finder speeds 8/64 fps frame & footage counter like new **$995**

BOLEX with 400' magazine rackover telescopic finder 110/24V motor Closeout Serviceable cond **$247.50**

MAURER 05, 16mm prod camera sync motor 400' mag; finder 3-lens turret Orig $5500; excellent **$1995**

★CAMERA ACCESSORIES

CECO 3 WHEEL DOLLY w/like seat $295 value Excellent condition **$149**

MITCHELL NC RABY BLIMP with follow focus Excellent condition **$995**

EK CINE SPECIAL AUBICON BLIMP with sync motor Reconditioned **$395**

BARNEYS Sound proof insulated for Wall 35mm camera Size 31" x 35" x 4" accommodates most cameras Value $125 Unused govt surplus **$49.50**

★LABORATORY EQUIPMENT

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MACBETH QUANTALOG Photometer transmission attachment $870 list Like new never used **$695**

DUPONT 35MM EDGE NUMBERING machine completely reconditioned **$1295**

★MOTION PICTURE PRINTERS

DEBRIE 16MM MATIPO picture and track Separate soundhead automatic control hi intensity lamp pilot pins built in feeds Originally $17 000 Fine condition **$5490**

CUSTOM BUILT 35mm Step Printer pilot pin registration Fair cond **$395**

B&H PRINTER 35mm step contact, pilot pin spreaders semi automatic light change Very good condition **$995**

★RECORDING EQUIPMENT

WESTREX 3160 OPTICAL 16mm RA1284 power unit RA 1283 mixer, RA 1282 amplifier RA 1231 3160 recorder 1214

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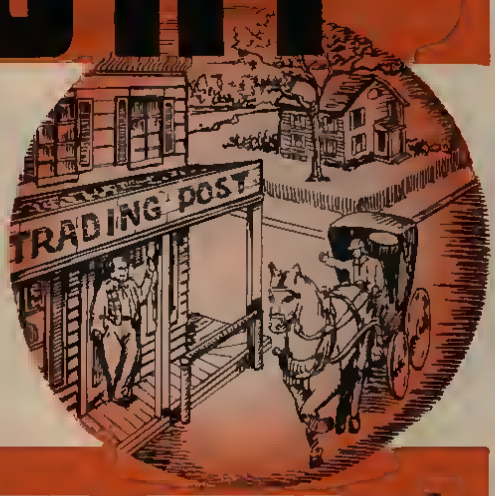

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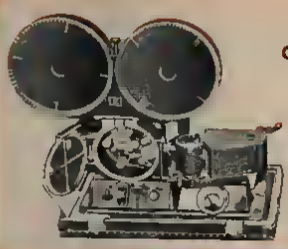

RCA PHOTOPHONE OPTICAL RECORDERS

35MM MODEL Standard of the industry Sold outright No royalties to pay Govt surplus, away below original cost Includes 220V 3 phase synchronous 2 1000' magazines footage counter Serviceable. ... $1995

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Reconditioning .. $1000

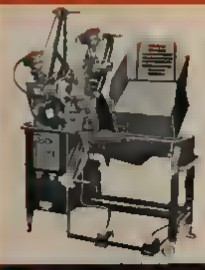
DEPUE PRINTER DOUBLEHEAD 35MM

Prints picture & sound simultaneously from picture negative & sound negative Also prints composite sound & picture from composite negative Orig $6600 Excellent condition $1295

B & H MODEL D 35mm sound printers—less shutters Separate motor flywheels installed Serviceable and can be reconverted $1795

B & H OPTICAL REDUCTION 35/16mm picture printer old model but looks good May require some repairs Closeout as is $495

DEPUE TWIN 75 SCENE light change board $2340 value $795



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Lightwelves 1242 microscope Originally $20 000 Fine condition... $9890

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KINEVOX 4 position mixer Accepts VU meter Cost $495 Like new..... $225

STANCIL HOFFMAN MAGNETIC RECORDERS 5.5 2 case 16mm edge and center tracks 2 position mixer forward reverse switches playback amplifier & speaker Orig $2400 recon ditioned $1295

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FILMCRAFT 35MM MOVIE BACKGROUND Process Outfit $15 000 value.. (Bank Foreclosure) Fair condition ... $1995

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★EDITING EQUIPMENT

WESTREX 16MM EDITOR separate picture and sound with synchatter 5" rotary prism viewer $4500 value Fine condition ... $1995

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CECO 35MM VIEWERS $600 originally condition like new ... $199.50

B&H FOOT SPLICERS excellent condition 35mm. $595 70mm $895

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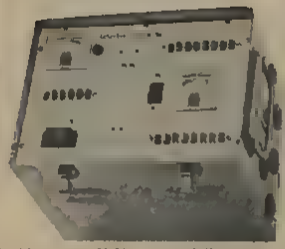

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BEHIND THE CAMERAS

Continued from Page 148

KEYWEST STUDIOS

FRED WEST ASC, (Family Films) Series of Religious pictures

METRO-GOLDWYN-MAYER

JAMES WILSON, "The Password is Courage" (Andrew & Virginia Stone Prod., shooting in England) with Dirk Bogarde and Nigel Stock. Andrew Stone, producer director

EUGENE SHUFTON, "Captain Sinbad" (Technicolor, King Bros. Prod., shooting in Munich) with Guy Williams and Heidi Bruehl. Byron Haskin, director

WILLIAM DANIELS, ASC, "Billy Rose's Jumbo" (Euterpe Prod., C'Scope & Metrocolor) with Doris Day and Stephen Boyd. Chuck Walters, director

GEORGE CLEMENS, ASC, "Twilight Zone"*

ROBERT PITTACK, ASC, "Andy Hardy"* (pilot)

JACK SWAIN, "Grand Slam"* (pilot).

MILTON KRASNER, ASC, "Two Weeks in Another Town" (C'Scope & Color, shooting in Rome) with Kirk Douglas and Edw. G. Robinson. Vincente Minnelli, director.

HARKNESS SMITH, "Dr. Kildare"*.

WILLIAM SPENCER, HAROLD WELLMAN, ASC, "Cain's Hundred"*

PARAMOUNT STUDIOS

JOSEPH RUTTENBERG, ASC, "Who's Got the Action?" (P'Vision color. Amro Prod.) with Dean Martin and Lana Turner. Daniel Mann, director

WALTER CASTLE, ASC, HASKELL BOGGS, ASC, "Bonanza"*

JOHN NICHOLAUS, JR., "Outlaws"*

PARAMOUNT SUNSET STUDIOS

FLEET SOUTHCOTT, "Gunsmoke"*

LESTER SHORR, ASC, "Pete and Gladys"*

REPUBLIC STUDIOS

HOWARD SCHWARTZ. "The Rifleman"*

WILFRID CLINE, ASC, "Robert Taylor Detectives"*

CHARLES BURKE, "Mr. G Goes to College"*

REVUE STUDIOS

RUSSELL HARLAN ASC, "To Kill A Mockingbird" (Pakula-Mulligan-Anthony Prods.) with Gregory Peck and Mary Badham. Robert Mulligan, director

JOSEPH LASHELLE, ASC, "A Child is Waiting" (Stanley Kramer Prods.) with Burt Lancaster and Judy Garland. John Cassavetes, director

JOHN RUSSELL, ASC, "Tall Man"*

ELLIS THACKERY ASC, "Wells Fargo"*

IRFU MANDL, ASC, ROBERT GOLCH, "Check mate"*

DALE DEVERMAN, JOHN RUSSELL, ASC, JOHN WARREN, ASC, "Alfred Hitchcock Presents"*.

BENJ. KLINE, ASC, "Frontier Circus"*

JACK MACKENZIE, ASC, ROBERT HOUGH, "Bachelor Father"*.

WILLIAM MARGULIES, ASC, "The First Hundred Years"* (pilot).

RAY FLIN, "The Young Men"* (pilot)

ARTHUR GRANT "Phantom of the Opera" (Color. UI Hammer Prod., shooting in London) with Herbert Lom and Heather Sears. Terence Fisher, director

NEAL BECKNER, BENJ. KLINE, ASC, JOHN WARREN, ASC, "Alcoa Theatre"*

BENJ. KLINE, ASC, WILLIAM MARGULIES, ASC, "87th Precinct"*.

DALE DEVERMAN, "General Electric Theatre"*.

RAY RENNAHAN, ASC, "Laramie"*.

JACK MACKENZIE, ASC, "Ichabod and Me"*

WALTER STRENGE, ASC, "Wagon Train"*

MACK STENGLER, ASC, "Leave It to Beaver"*.

DOUGLAS SLOCOMBE, "Freud" (shooting in Munich) with Montgomery Clift and Susannah York. John Huston, producer director

MILTON KRASNER A.S.C.

Completed shooting "Two Weeks In Another Town" February 1st at MGM and will begin shooting 5th segment of MGM's Cinerama production "How The West Was Won," March 10th

TWENTIETH CENTURY-FOX

TED SCAIFE, "The Lion" (Deluxe color & C'Scope, shooting in Africa, Samuel G. Engel Prod.) with William Holden and Capucine. Jack Cardiff, director.

ARTHUR IBBETSON, "Nine Hours to Rama" (C'Scope, Deluxe color, Red Lion Prod., shooting in India) with Horst Buchholz and Jose Ferrer. Mark Robson, producer director.

LEE GARMES, ASC, "Hemingway's Young Man" (C'Scope & Color, Jerry Wald Prod.) with Richard Beymer and Paul Newman. Martin Ritt, director

KENNETH PEACH, ASC, "Follow the Sun"*

LLOYD AHERN, ASC, "Adventures in Paradise"*

LEON SHAMROY, ASC, "Cleopatra" (J. Mankiewicz Prod.; Todd AO, shooting in Rome) with Elizabeth Taylor and Richard Burton. Joseph Mankiewicz, director

TV GRAPHIC STUDIOS—New York

TED PAHLE, ASC, Name Band Musicals (color). Bernie Rubin, director

WARNER BROS.

PHIL LATHROP, ASC, "Days of Wine and Roses" (Martin Manulis-Jalem Prod., shooting at Bay Meadows) with Jack Lemmon and Lee Remick. Blake Edwards, director.

OSSIE MORRIS. "Term of Trial" (Remus Prods., shooting in Ireland) with Laurence Olivier and Simone Signoret. Peter Glenville, director

HARRY STRADLING. ASC, "Gypsy" Mervyn LeRoy Prod., Technicolor) with Rosalind Russell and Karl Malden. Mervyn LeRoy, director

LEWIS JENNINGS, WILLARD VANDERVEER, BURT GLENNON, "Lawman"*

J. PEVERELL MARLEY, ASC, IRVING LIPPMAN, HAROLD STINE, ASC, JACK MARQUETTE, "77 Sunset Strip"*

Continued on Page 194

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HOLLYWOOD BULLETIN BOARD

Candid camera glimpses of ASC members and guests at Society's February dinner-meeting.

OSCAR NOMINEES for Cinematography received accolades of fellow ASC-members at the Society's February dinner-meeting Congratulating Daniel Fapp who has two pictures nominated— One Two Three in B&W and "West Side Story", in color—are (from left) Sol Halprin, ASC Proxy Bill Daniels, and Charles G. Clarke

EDWARD COLMAN (center) had two pictures in the Preliminary List, one of which—"The Absent Minded Professor" a Walt Disney Production is among the five nominees in the black-and-white photography category. Congratulating Colman is Phil Lathrop (left) and Arthur Feindel. Colman's Academy nomination this year is his first

CHARLES LANG, JR. (3rd from left, facing) is congratulated by fellow-ASC member Arthur Arling during course of ASC's dinner meeting February 26th. Lang's nomination is "Oye-Eyed Jacks," in the color photography category

ERNEST LASZLO (center) receives hearty congratulations from Hal Mohr (right) and Irmin Roberts on occasion of the nomination of "Judgment at Nuremberg" for achievement in black-and-white photography

PICTURED WITH Bill Daniels, President of the ASC (3rd from left), are special guests Jim Henderling, Secy. of Production Unit Managers Guild, Dave Friedman, President of the Guild; and Grant Smith, of Walt Disney Prodns

WALTER GEYER, Chairman, ASC Research & Educational Committee, rendered report on Committee's first six months' activities and told of interesting developments that will enhance cinematographers' work on the screen

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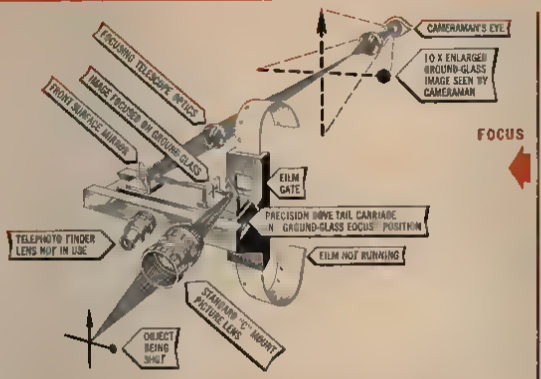

IN USE FOR FULL-FRAME GROUND-GLASS FOCUSING

"Super 1200" Reflex Ground-Glass Focusing-Frame indicates the field covered by any focal-length lens at all distances. A 10X enlarged Ground-Glass image is seen by the Cameraman, for needle-sharp critical focusing.

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- 600 and 1200 ft film Magazines available. Up to 33 minutes of continuous filming.
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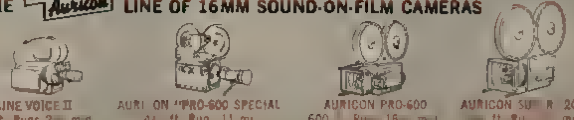

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THE FOUR SCENES above are from 'The Magic Sword,' and illustrate one of the many sequences involving intricate combinations of miniatures and special optical effects.

THE TWO-HEADED dragon, threatening the maiden in picture (above left) is a miniature combined with live action. Above, monster lashes out at hero with its tail—a full scale prop

Movie Magic For "The Magic Sword"

There's slick color photography and scores of unusual special effects in this terror-fantasy film that holds much for students of cinematography and moviegoers alike.

By DARRIN SCOT

BERT I. GORDON, producer of 'The Magic Sword,' visualizes a camera setup with aid of director's viewfinder and miniature cutout of player on horse. Much of the picture is a combination of miniatures and live action skillfully integrated.

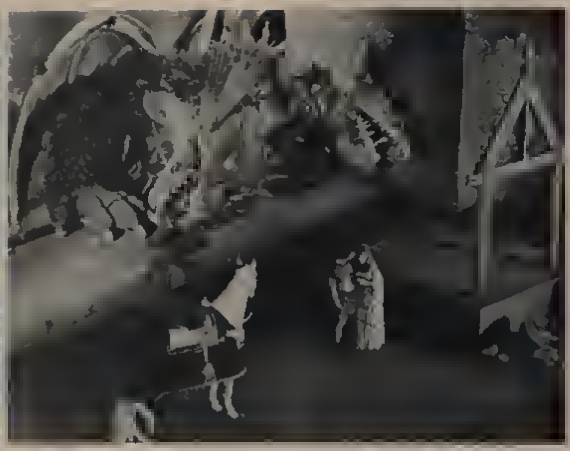
"THE MAGIC SWORD," an exciting terror-fantasy photographed in Eastman Color for United Artists by Paul Vogel, A.S.C., is a *tour de force* of spectacular illusions achieved through a highly complex combination of special effects techniques.

Over and above this technical achievement, however, it represents an important milestone in a personal success story which, in itself, has many of the aspects of a Cinderella fantasy. "The Magic Sword" is the tenth and most ambitious production of Bert I. Gordon who, several years ago, pulled up stakes and moved his family from the Middle West to Hollywood, determined to become an independent producer-director of feature films.

Today, he has not only achieved that goal but is also recognized as one of the top special effects experts in the industry. Having started from scratch and taught himself the intricacies of special effects technology the hard way, he has applied a high degree of camera magic to a whole string of his own productions, which include: "King Dinosaur," "The Cyclops," "The Beginning of the End," "The Fantastic Puppet People," "The Spider," "The Colossal Man," and "The Boy and the Pirates."

"The Magic Sword" is a colorful tale of derring-do based on the legend of St. George and the Dragon. By combining animation, traveling mattes, split-screen and superimposition techniques, Gordon has

THE HERO attacks the two headed dragon and slays it with his magic sword as the maiden, still chained, watches. Scene is combined live-action and miniature shots, superimposed.



HERO AND PRINCESS embrace in shadow of Castle rampart as the slain dragon expires on the parapet above them—another example of miniatures combined with live action for a realistic effect

ingeniously created battles, first with a 25-foot ogre and later with a giant two-headed fire-breathing dragon which, on the screen, appears to be forty feet long. There are also haunted forests, magic mirrors, demon-possessed caverns, flourescent ghosts and a variegated collection of off-beat characters including evil sorcerors, assorted hags, "little people," giants, pinheads, dwarfs, specters and bird-men.

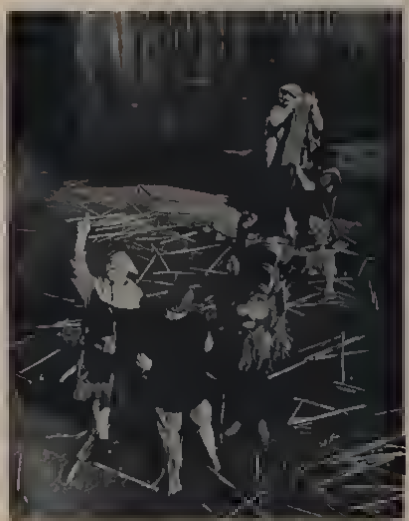
The "star" of the show, at least from the special effects standpoint, is of course, the dragon. The model of this double-featured monster was actually only eight feet long. Activated by wires and mechanical controls, it was rigged with compressed air jets to make its twin tongues lash out angrily. It was also equipped with gas ducts enabling it to spew sheets of flame from all four nostrils. A moment of anxiety developed when the dragon back-fired—that is, he breathed in when he should have breathed out, thereby setting his costly innards on fire. Quick thinking by a standby fireman, who rushed in with a cooling drink, relieved the dragon's "heartburn."

Cueing Involved Intricate Charts

In creating the battle with the dragon, the live action involving George and the captive princess, was filmed first, and the miniature dragon photographed and printed-in to the scene later. One of the main problems was to cue the live action so that, at moments when the dragon would be charging and spraying flame, the live actors would back away and simultaneously be illuminated by the glow of the flames. Intricate timing charts were prepared so that the action of the dragon could later be cued to the exact frame to match that of the live players.

Another important consideration in the dragon battle sequence was that of visual continuity. Great care had to be taken to insure that the perspective of scenes showing the dragon would match those of the live-action scenes, Vogel explains, since the

Continued on Page 191



ONE OF THE MANY "miniaturized" scenes in which real actors play against giant scale sets and props. Here the little people carry the Magic Sword with which the hero of the story ultimately slays the dragon.

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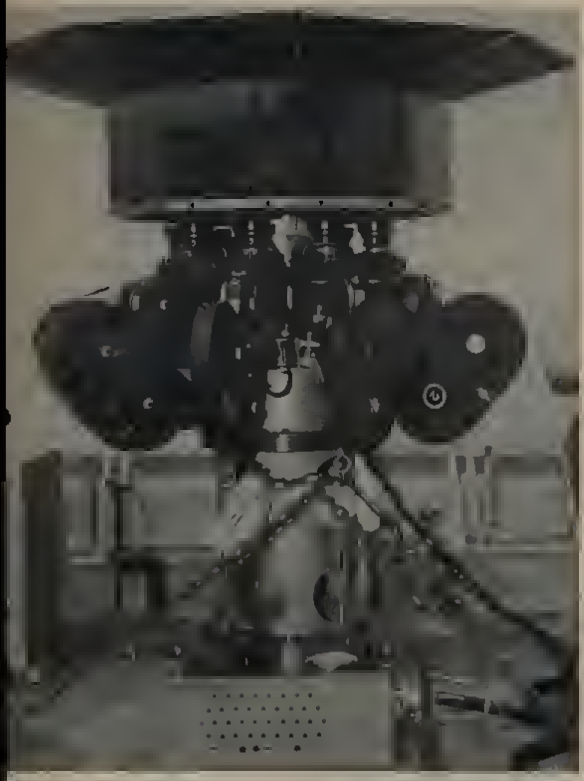


MODERN VERSION of the Circarama photographic unit has nine Arriflex 16mm cameras mounted vertically to shoot straight up into individual front surfaced mirrors set at 90° angle and cover a full 360° field of view. In foreground is control box through which cameras may be operated from remote position

CIRCLING ITALY

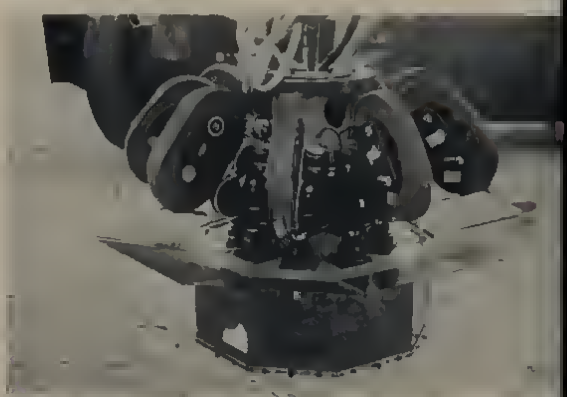
By HERB A. LIGHTMAN

THE HIT OF THE SHOW at the Brussels World Fair was Walt Disney's Circarama, the amazing "movies-in-the-round" system which presented a complete circle of cinema-spectacle projected on a continuous 360-degree screen. Originally developed by engineers of Walt Disney Studios as a permanent exhibit for Disneyland, Circarama delighted millions of Fair visitors who stood in the center of the vast circle and thrilled to a colorful panorama of scenic America unfolding on all sides.

Singularly impressed by this ultimate in wide-screen cinematography were representatives of Italy's giant Fiat Corporation who were then casting about for a spectacular exhibit to represent their organization in the Italia '61 Exposition, which was held in Turin, Italy, last summer.

Because the purpose of the exposition was to celebrate the centennial anniversary of Italian unification, Fiat contracted with Walt Disney Productions to produce a sweeping cinematic spectacle that would trace the past and present glories of the Italian nation. Slanted to be much more than merely a glamorous travelogue of the country, the firm's main purpose was to show Italy's people, natural resources, historical landmarks, modern day inventions and such scientific developments as nuclear reactor plants built to generate electrical power.

In preparation for this assignment, Disney technicians re-designed their equipment to include several important innovations which had been developed since the original Circarama system was conceived. Where formerly the photographic setup utilized a battery of eleven Cine Special cameras equipped with 200-foot magazines and 15mm lenses, Arriflex 16mm cameras were substituted. These had the advantage of 400-foot magazines, thus doubling the shooting capacity per film load. Moreover, since 12½mm wide-angle Taylor-Hobson-Cooke lenses were to be used (each of which covered a horizontal angle of 40 degrees) only nine cameras would be needed to cover the full 360-degree circle instead of eleven, as in the first Circarama camera setup. These lenses also increased the vertical angle that could be covered from a given distance—a great advantage when filming mountains, skyscrapers, towers and other tall structures.



THE CIRCARAMA cameras are sometimes operated in reverse position—i.e. with the whole unit upside down, as shown here. To shoot scenes for the Fiat production described by author, the unit was suspended from a giant crane in the position pictured, and elevated to a considerable height for a breathtaking panoramic view of shipyards in Genoa, Italy

WITH CIRCARAMA

How a new, improved Circarama camera assembly was used to produce a "movie-in-the-round" for the Italia '61 Exposition.

THE CIRCARAMA camera unit mounted on a boat for scenes shot on the Grand Canal in Venice, Italy. Here sunshade flaps are mounted both below and above each camera mirror segment to shield against both water and sky reflections

The lenses were set at a permanent fixed-focus distance of 15 feet—the hyperfocal distance at the maximum aperture of T.2. This meant that even when shooting wide open the lenses had a depth of field ranging from 6½ feet to infinity. By stopping down to T.22 sharp images were possible of objects as close as 18 inches from the camera.

Instead of being mounted on a circular pedestal horizontally, as before, the cameras were installed vertically—that is shooting straight up into individual front-surfaced mirrors set at a 90-degree angle. This arrangement resulted in a more compact unit.

Each camera was driven by its own separate motor which operated together with all of the others by a mechanical interlock. The entire bank of cameras was operated from a single control box about the size of a typewriter. This box included a rheostat for changing camera speed, an electric techometer which accurately indicated frames per second, and a footage counter. In addition, the control box featured a row of small lights—one for each camera—connected to a buckle switch. In case of malfunction of any of the cameras, this switch would be tripped causing a light to flash on the panel to indicate instantly which camera was affected. This overcame a major disadvantage of the earlier set-up—namely, that when something went wrong it was often not discovered until too late to remedy the situation.

The No. 1 camera of the group, i.e., the one whose segment of the scene the audience would see when looking straight ahead, was fitted with a specially designed right-angle viewing tube that connected with the Arriflex finder and permitted the operator to see a properly oriented image. The cameras were mounted on a circular revolving index plate equipped with a plunger pin that could fall into any one of nine holes representing the various camera posi-

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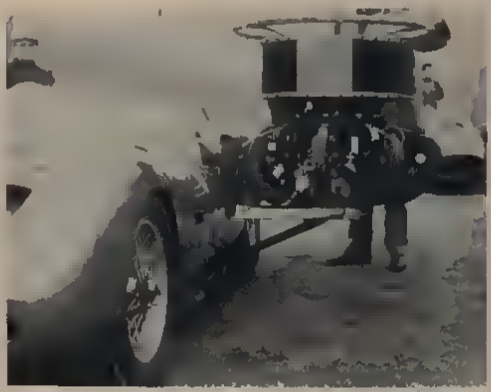

CIRCARAMA CAMERA cluster mounted on side of a Ferrari race car for scenes that were filmed on the famous Monza race track

FOR SHOOTING spectacular panorama scenes from high elevations, Disney engineers designed this telescoping hydraulic lift. In this position, the Circarama cameras were operated remotely from the control box through a cable extending downward from the camera unit. (All photos © MCMLX by Walt Disney Prod.)

GAS PIPE DOLLY

A homemade mobile camera mount that does everything a professional job will do.

By JAMES B. NEFF

BEFORE STARTING TO film a documentary, I decided that the need for a camera dolly was imperative. Not wishing to rent or buy one, I decided to build my own.

Casting about the premises for suitable material, I found a quantity of water pipe and fittings. Armed with nothing more than hand tools such as hacksaw, drill, wrenches, et cetera, I began construction. At length, after some hours of diligent endeavor, I ended up with the "plumber's delight" pictured here.

In actual use, I found the dolly all I had hoped it would be. A wing nut and two bolts strategically located locks the head in any position, or will allow complete freedom or braking action in one or all three directions—that is, up, down, panning, etc. It proved to be rock steady for both my 16mm and 35mm movie cameras. The head can also be raised on an extension and held in place. As an added luxury, I added a seat which can be removed in a jiffy.

The basic horizontal frame is made of one-inch pipe, forming an isosceles triangle, 30"x30"x43". The corners are formed by using three 90-degree elbows and two 45-degree straight ells screwed together. Two tees are used in the frame to hold the 19" cross members which brace the assembly and support the tripod column.

Continued on Page 191

AUTHOR'S gas pipe camera dolly is sturdily built of pipe and fittings, rolls easily, and has an efficient pan and tilt head. Demonstrating it is model Diana Neff.

THERE'S a removable seat too supported by assembly shown in photo below.

DETAILS of locking collar for adjustable camera support.

VIEW of pan-tilt head, made of pipe fittings, bolts and nuts.

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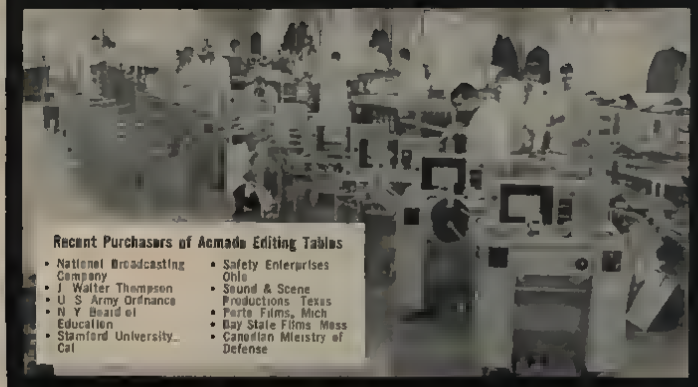

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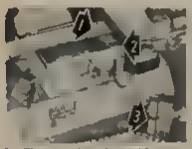

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'Oscar' Nominees For Best Cinematography

Hollywood Directors of Photography name five black-and-white and five color productions of 1961 for Academy Awards Consideration.

IT'S LESS THAN six weeks till Academy Awards time when, out of the list of nominees for Best Photography named by the cinematographer membership of the Academy of Motion Picture Arts and Sciences, the best photographic achievement in black-and-white and in color for 1961 will be announced.

From among some 300 feature motion pictures released in the U.S. during 1961, industry Directors of Photography who are members of the Academy have nominated five black-and-white and five color productions for the Academy's ultimate consideration for the two "Oscars" to be awarded April 6th for Best Photographic Achievement. The nominated productions and their respective Directors of Photography are listed below.

The Academy's Award of Merit—the "Oscar"—is bestowed for achievements in connection with motion pictures first publicly exhibited for paid admission in a regular commercial motion picture theatre in the Los Angeles area between January 1, 1961, and to and including December 31, 1961. In addition to the two "Oscars" awarded annually for Cinematography, awards are also made in twelve other categories of film production.

Most people understand how the final winners are determined but the selection of nominees is a source of mystery to almost everyone outside the motion picture industry.

The cinematography awards procedure begins shortly after the first of January each year when a reminder list of all eligible black-and-white and color productions is sent with a preliminary ballot to all members of the Academy Cinematographers Branch. These cinematographers then vote in the order of their preference for one or more, but not more than ten, productions in each classification.

The ten black-and-white and ten color productions receiving the greatest number of votes from this preliminary balloting are then screened over a period of 30 days to give all members of the Academy's Cinematographers Branch an opportunity to see them under the same conditions.

Following the screenings, a nominations ballot listing the 10 black-and-white and 10 color productions, is sent to all members of the Cinematographers

Continued on Page 186

Nominees For Best Achievement In Cinematography For 1961

BLACK-AND-WHITE

Edward Colman, A.S.C.
"The Absent Minded Professor"
Walt Disney Productions

Daniel L. Fapp, A.S.C.
"One, Two, Three"
Mirisch Company, Inc.

Ernest Laszlo, A.S.C.
"Judgment At Nuremberg"
Stanley Kramer Productions

Franz F. Planer, A.S.C.
"The Children's Hour"
Mirisch Worldwide Productions

Gene Shufton
"The Hustler"
Robert Rossen Productions

COLOR

Jack Cardiff
"Fanny"
Mansfield Productions

Daniel L. Fapp, A.S.C.
"West Side Story"
Mirisch Pictures, Inc.

Charles Lang, Jr., A.S.C.
"One Eyed Jacks"
Pennebaker Productions

Russell Metty, A.S.C.
"Flower Drum Song"
Ross Hunter Production

Harry Stradling, Sr., A.S.C.
"A Majority of One"
Warner Brothers

The "Oscar"

The Dubbing Of Sound

Dubbing a sound track for a feature film may involve as many as 30 different sound effects in addition to the dialogue and music.

By PETER MUSGRAVE

THREE PAIRS OF HANDS—one job. The hands belong to the dubbing mixers at Pinewood Studios, London, who mix the many varied sound tracks that add background noises to the finished Rank Organization films. It is a complicated job, sometimes involving as many as 30 different sound effects to produce a finished track. (Photo by Ian Jeayes, © by Rank Overseas Film Distrs., Ltd.)

OF THE FEW REMAINING departments in a film studio to be shrouded in anonymity, that of sound editing must be high on the list. Yet it is an important facet of all but the most static of photoplays, and in many cases heightens dramatic effect or realism so far as to contribute seriously to a film's success. Do you remember the nerve-stretching tension incited by the grinding gears and puffing air-brakes of the nitro-glycerine trucks in Clouzot's "Wages of Fear?" Or the explicit detail of horses, men and battle in the sound-track of Ford's "The Horse-Soldiers?"

The sound editor's work usually commences with the preparation of print pairs of short action and sound loops of any scenes where the dialogue may:

1) Be of unsatisfactory recorded quality due to interference from traffic, wind, or microphone position.
2) Be capable of an improved performance by the actor/s.
3) Need to be re-voiced completely by a more suitable artist.

These scenes are then rehearsed and performed anew by the actor in the quietness of the recording theatre.

Instead of recording every bad attempt at the lines on a roll of new stock until a satisfactory one is finally obtained, the modern practice is to run a third loop (of equal length to the first pair) of magnetic film in the recorder which is automatically wiped after every unsatisfactory or "N.G." take. Immediately a good take is achieved a switch is operated which both stops erasure and plays back the desired line in sync with the picture loop. Hence an enormous saving in film stock and subsequent editing time.

The recorded dialogue is usually prepared for dubbing (re-recording or mixing) by splitting onto 3 or more tracks for each reel of action:—1 original sync track (carefully "cleaned up" and smoothed out), 2 tracks containing any new looped dialogue (maybe the "hero" on one, and everyone else on the other, or whatever suits the reel), and another track containing all lines to be modified with echo or telephone filtering, etc.

Deciding Type of Sound Equipment

Next come the more creative decisions as to the type of sound treatment to give the whole film. The director may have strong opinions on this, also it is useful to know the style of music and scoring envisaged by the composer, even though this is always recorded too close to dubbing to affect your decisions very much. A simple example: a close 2-man brawl in a drama needs savage, meaty punching noises, agonized grunts, heavy breathing. But in a comedy the punches might be more like wet fish, punctuated by the rasp of tearing trousers.

When a detailed summary of all necessary sounds

is complete, this is split into three lists:

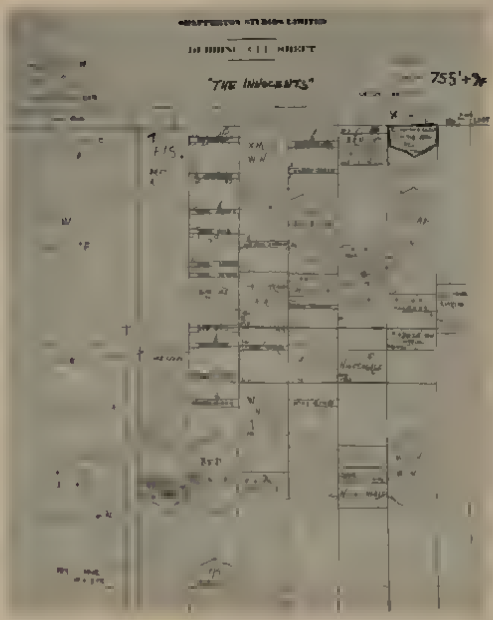
1) Footsteps, movements and other small-scale noises to be shot in the recording theatre, usually in sync with relevant picture loops duped from the workprint of the scenes concerned.
2) Other sounds which must be shot on the studio lot or on location, i.e., cars, explosions, wild animals, background or atmosphere tracks, etc.
3) Sounds available from stock libraries. There are often tracks which might be on list 2 instead or vice-versa, and the decision must be influenced by cost and practicality versus suitability and quality. (In Britain the libraries charge a royalty of 70 cents a foot on the amount finally used in the dubbed track).

Sound Gap Important

When all the necessary components for the dub have been obtained, these are cut around and synchronized to the action reels as they are received from the picture editor. The number of dubbing tracks or units necessary for each reel will be decided by the maximum number of simultaneous sounds occurring in it, bearing in mind that a reasonable gap must be left between dissimilar sounds following each other on any one track. This gap is to give the dubbing mixer time to alter his volume and equalizer settings to suit the upcoming sound. Sufficient length must also be allowed where there is a picture dissolve for the first set of tracks to fade out and the next set to fade in simultaneously.

A great saving of time and film for a steady background sound (such as a stream, birds, wind, traffic, etc.) is to run a loop of it, but this, of course, monopolizes one replay machine for the duration of the reel.

INTENT ON THE SCREEN before him at Pinewood Studios, the dubbing mixer varies sound tracks to add background noises to the finished film. His guides are the projected image on screen above the console, and the dubbing cue sheet in front of him. (Photo by Ian Jeayes, © by Rank Overseas Film Distrs., Ltd.)



DUBBING CUE SHEET used for the 20th Century Fox production, "The Innocents," filmed at Shepperton Studios, Middlesex, England. Cues are provided for six different sound effects tracks. The V-shaped marks, inverted and otherwise, indicate that a track is to fade in or out at that point. A separate chart was used for the dialogue and music tracks.

Cue Sheet Important "Tool"

While the average movie has its quota of new sounds to be produced or gimmicks to contrive, it is seldom that such an unusual assignment as my recent one occurs. This was "The Innocents," produced and directed in Britain for 20th Century-Fox by Jack Clayton, a highly individual film-maker who is rewarding to work with because he takes a close interest in every explicit detail of his films from script to screen, yet has time to appraise any contributory suggestion which may be made to him.

A typical cue-sheet used by the sound mixers in dubbing sound for "The Innocents," is pictured on this page. Note that every start and end footage is shown, as measured from the start of the relevant reel.

When I started on this film as Sound Editor, I was glad to see that the script already had firmly in mind the contribution to weird atmospbere that

Continued on Page 180

WORKING WITH camera mounted on shoulder brace enabled author Landrum and Producer Phil Smith to move quickly in the limited time allowed to shoot the film. Sounds of the men walking are recorded here by the Transist O Sound amplifier built into the Auricon camera

LANDRUM, BEHIND CAMERA, shoots scene of prisoners scrubbing cell floors while Smith mike in hand, gives running commentary. Available light was sole illumination for shooting, even inside the cell block

"First Person" Camera Technique

WLW-I's "walking sound-film camera" attained greater eloquence and a new dimension when it assumed a first person viewpoint in documenting a TV film report on contemporary prison life.

By BILL LANDRUM
Chief Photographer, WLW-I, Indianapolis Ind

A PROBING CAMERA is a mobile camera. It may be on wheels—a dolly, crane or camera car. Recently we put it on feet—on the cameraman who shoots with it hand-held as he walks to or from his subject, weaving in and out among crowds of people, or moving to a new camera viewpoint quickly, then shooting—faster than it could be done were the camera tripod- or dolly-mounted. We call this technique the "walking sound-film camera" and recently we put it to good use in photographing a unique documentary film for WLW-I, Indianapolis.

Not long ago, we of WLW-I News department were allotted a half-hour of prime evening air time by the station and carte blanche as to the program content. Phil Smith, the station's Assistant News Director, is also a part-time counsellor for the Marion County Juvenile Center. He suggested the time be used to tell the inside story of the Indiana State Reformatory at Pendleton.

Pendleton, as the Reformatory is popularly called, is a maximum security prison for men between the ages of 15 and 30 years. Average age is 23—an age, say prison officials, when these men have the greatest physical strength but immature judgment, and hence are most likely to get into trouble. Fifty per cent of the inmates paroled from

Pendleton return, because of parole violations — the offenses ranging from burglary to narcotics. This, then, was to be the subject of the film we were to make for the 30-minute TV time reserved for us.

To give a new dimension to the film presentation, we decided to shoot the entire story "first person camera," whereby the audience would see the prison as a new inmate views it following his imprisonment. The camera would, in effect, become the prisoner and its lens his eyes.

The camera and the manner it was used is shown in the accompanying photos. It is an Auricon 16mm single-system sound camera equipped with the author's Transist-O-Sound amplifier, and mounted on a lightweight shoulder brace. With this camera and its comparatively lightweight—six pounds—AC power pack, we can go anywhere there is sound film to be shot. We have recorded many events with actual on-the-scene sound, using this equipment, where our competition had to be satisfied with silent footage.

Continued on Page 184

AN OBLIGING inmate assists the film makers by carrying power supply pack for the Auricon camera, as Lendrum and Smith prepare to shoot a sequence depicting the Reformatory's "Hillbilly" band in action

A.S.C. RECOMMENDATION No. 7

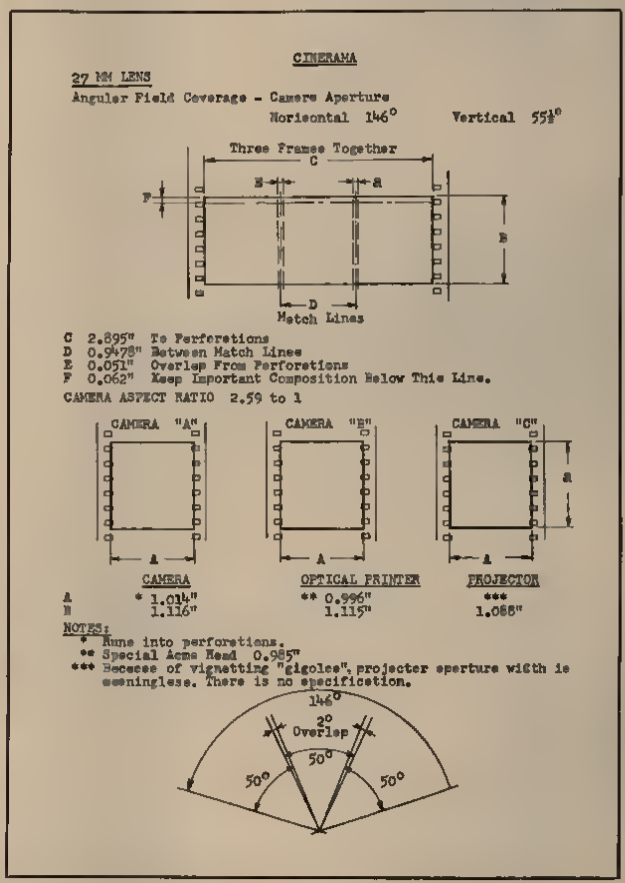
Cinerama camera, printer and projector aperture dimensions and angular field coverage data.

By WALTER BEYER
Chairman, A S C Research and Educational Committee

THIS RECOMMENDATION is a follow-up on technical details about some overall design considerations of the Cinerama system, which was described extensively by William Daniels, ASC, in his article, "Cinerama Goes Dramatic," which appeared in the January, 1962, issue of *American Cinematographer*.

A study of the Cinerama system has been undertaken by our Research and Educational Committee in view of the fact Cinerama is now being used in the production of feature films, the exhibition of which will undoubtedly extend far beyond the areas reached by

Continued on Page 182



THE individual camera aperture dimensions, also dimensions of the integrated images for Cinerama scenes photographed with 27mm lenses

AUTOMATION IN ANIMATION

Some ingenious devices that impart the illusion of motion to artwork are used in producing the "Clutch Cargo" cartoons for television.

By TOM PICKENS

CAMBRIA STUDIOS, producers of the "Clutch Cargo" TV cartoons, refer to the show as "television's first comic strip." This is because, although the cartoons possess "full movement," the action is less costly to produce than when conventional animation techniques are used. Cambria employs some unique mechanized methods to simulate animated cartoon movement in the "Clutch Cargo" series.

With Cambria's system, elements of artwork are given motion mechanically wherever possible, rather than by the single-frame exposure method usually employed for animated cartoons. The producers aim to avoid conventional or "full" animation as much as possible. Episodes in the series are regularly turned out which contain as little as 12 per cent single-frame animation photography. Nevertheless, the illusion of fairly smooth and continuous movement is a remarkable feature of these films.

The illusion of full movement in the "Clutch Cargo" show is created through a series of technical tricks that are both ingenious and economical and for the most part, guarded secrets of Cambria Studios.

Among them are:

1) Methods of superimposing live effects over cartoon scenes while the camera is in *continuous* operation.

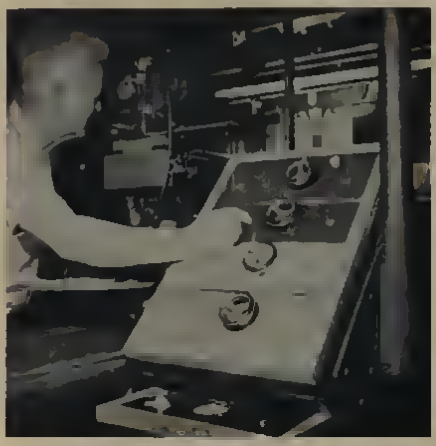
2) Incorporating working, three dimensional models with artwork on a live-action basis.

Frequently, cartoon sequences in "Clutch Cargo" are filmed at speeds of 24 frames per second, using live action techniques. As few was two or three animation cels may be required for a single take. This makes it possible to produce "animated" cartoons for a fraction of the cost of full animation.

Such production economies have not hurt the consumer acceptance or popularity of "Clutch Cargo."

Continued on Page 174

MANY OF THE art backgrounds for "Clutch Cargo" are designed to accommodate 3 dimensional models photographed as live action instead of a frame at a time



CONTROL PANEL, pictured at right, is key to Cambria Studio's automated system of animation. It permits cameraman to shoot animation cels in continuous instead of single frame exposures to simulate almost any type live-action camera shot

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ANIMATION

Continued from Page 172

By the fall of 1961, the series was appearing on some 80 TV stations around the country, both in color and black and white. The show has an estimated 23 million viewers weekly, ranging through all ages and heights of brow.

Although limited animation is employed, "Clutch Cargo's" creators insist that they are not making animated cartoons

"We're making comic strips for television and this is a completely different form of expression," says Dick Brown, Cambria's president and executive producer

Brown's attitude is seconded by Clark Haas, former artist on the "Buz Sawyer" newspaper comic strip, who is the creator of and art director for the "Clutch Cargo" series. "The results we obtain aren't comparable to conventional animation," says Haas. "We're someplace in between live action and drawing."

Some indication of how "Clutch Cargo" differs from other popular TV cartoons is illustrated by the fact that only about a thousand animation cels are required to make a full half hour show—six 5-minute segments. By contrast, it often requires a thousand cels just to create one minute of action, using the full-animation technique A further economy is the fact all cels, which are used in each "Clutch Cargo" episode, are carefully stored for possible re-use in future episodes —similar to the way Hollywood studios stock key set pieces for re-use in later productions

This conservative use of animation cels is made possible through a series of new mechanized techniques developed by Cambria Studios. One of the most important innovations is a continuous action rig which allows the cameraman to shoot animation cels at live action camera speeds, and simulate almost any type live action camera shot, including trucking, dolly and pan shots.

This continuous action device utilizes glass panels on which animation cels are mounted. The panels are then moved horizontally in the lens field by motors turning at pre set speeds. A 16mm camera photographs the resulting motion.

Using this arrangement, the camera-

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man cels for example photograph one cel representing a rocket ship against a moving background of sky in continuous action at 24 frames per second. Artwork requirements are reduced to individual drawings of the rocket ship and background. Because the sky (on one glass panel) is moving past the cel representing the rocket ship, the camera records it as full movement. By increasing the number of cels, the cameraman can utilize more than one rocket ship and have them traveling at different speeds.

Further action can be added to the scene by superimposing live effects such as smoke and flame. If a rocket ship appears in the "Clutch Cargo" series spouting fire out of its tail, the fire is real. It is superimposed at the time the rocket is photographed against the moving art background of sky.

The superimposing mechanism is an optical reflection device called a "frajilly" by the company wits because it came in a box marked FRAGILE. By setting this mechanism immediately between the camera and the continuous rig, a jet of fire, or any natural effect or live action which can be created in the studio, is optically superimposed on the artwork on the action rig. The live effect is produced in an area at right angles to the artwork, and "frajilly" blends the two together for the benefit of the camera.

Artist Haas and technical director Edwin Gillette are constantly on the lookout for new techniques which will enable them to produce realistic movement on the screen without requiring additional drawings or cels. In many instances they have been able to integrate working models and three dimensional mock-ups into an action. For instance, in one "Clutch Cargo" episode with a Holland locale, the background contained a number of windmills whose arms actually turned mechanically.

Perhaps the most ingenious of "Clutch Cargo's" many technical innovations, however, is a process called Synchro-Vox. An invention of Edwin Gillette, this process superimposes over the drawings of faces in the strip, live-action photography of an actor's lips speaking lines. The illusion obtained is that of a talking cartoon character with life-like movement, expression and perfectly synchronized voice.

To accomplish this, an actor is first photographed speaking the lines. This

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film is shot through a matte which eliminates all but the actor's mouth. The image of the moving mouth is then superimposed over the pen and ink artwork on the action rig. The cel drawings of the character's faces used in this process are complete except for the mouth area.

Absolute voice syncronization is obtained, since the sound is recorded at the time the live-action lip movement is photographed. In conventional animation, hundreds and sometimes thousands of hand drawings must be made to create the illusion of a person talking. Cambria's method makes it unnecessary to draw mouths to fit the dialogue.

All photography for the "Clutch Cargo" series is done in 16mm color. The film used is Ektachrome Commercial Type 7255. Release prints are processed for Cambria by Filmservice Laboratories in Hollywood. Color release prints are made on Eastman Reversal Color Print Film, Type 5269. Black-and-white releases are made on Eastman Fine Grain Release Positive Film, Type 7302, from Eastman Fine Grain Panchromatic Duplicating Negative.

The success of the "Clutch Cargo" films is underscored by the recent selection of the series for presentation in the RCA exhibition hall in New York City as an outstanding example of the quality of color television.

Each "Clutch Cargo" adventure is divided into five 5-minute episodes. The show can be presented daily in 5-minute chapters or once a week as a half-hour feature.

With 52 half-hour "Clutch Cargo" stories completed on film, (260 five minute episodes) the fertile minds at Cambria Studios are looking for new cartoon strip ideas to introduce to television.

"Space Angel," a science fiction series, is next in line. There will be other new strips after this, and Cambria Studios hopes to be able to offer

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TV stations a full hour of animated program material daily within a very few years. This, they feel, represents maximum saturation, after which Cambria would only be competing with itself. All of the cartoons now being planned by Cambria will utilize the same mechanized movement in the production techniques that has proven so successful with "Clutch Cargo."

The application of these techniques are not limited to television alone, according to Brown. Cambria Studios has had marked success with them in incorporating three dimensional moving models and mock-ups in the production of films for industry and the military.

In addition, Cambria holds there are marked benefits in the use of their methods in the production of educational films, titles, and experimental movies. e

DUBBING SOUND

Continued from Page 189

the final track could make—mainly in terms of half-heard whispers from the two ghosts and either heightened or disappearing natural sounds. Since, however, I am a firm believer in the untapped possibilities of electronic audio effects, I persuaded Clayton to use them in many sequences, either instead of or as well as natural sounds I think it is the first time they have been used in a "period" film

Perhaps the most successful of these was the "ghostly presence" moaning sound which drifts in whenever the broken-hearted spectre of the governess, Miss Jessel, is near This was mainly several sine-waves (with a short sweep) of such similar frequency as to "beat" together slightly. Faint human moaning was added and then considerable overall echo applied.

At the end of a reckless pony-ride around the paddock by young Miles, I needed the sound of an invisible cloud of rooks taking off, with a hint of applause beating in I made this with a short film-loop of a single pigeon's wings flapping, fed into a ¼" tape recorder having a replay head located 2-inches ahead of the main head and which was used to supply an increasing amount of tape echo. This soon built up to an enormous volume of flapping, and just as the inherent distortion got out of hand I increased the

tape speed and faded out simultaneously

A sinister legacy from the dead governess was a music-box treasured by the possessed children Composer Georges Auric wrote an excellent simple melody for it, but the problem was to get a tinkly music-box effect while preserving the same speed as a different tune used from a playback disc during location shooting To solve it, the old track was relayed at half-speed to headphones worn by a celeste-player who performed the new tune at that speed on the top register of his keyboard. This was recorded on a synchronous tape-machine at 7½ i.p.s. but afterwards played-back at 15 i.p.s. The result of this was a new tune at the correct speed but exactly an octave higher than could be achieved on a celeste

Sound dubbing and editing is a complicated job which often involves as many as 30 different sound effects to produce a single finished track Playing a big role are innovation and resourcefulness — two factors highly important to the art, for it has been truly said that when you stop experimenting in the film business, you may as well retire. ■

GAS PIPE DOLLY

Continued from Page 164

The upright column is made of a two-inch pipe nineteen inches long, joined to a 1½ inch piece which is fourteen inches in length These are joined together by a reducing bell. The bottom of the column is screwed to a two-inch floor flange, which is bolted to the cross members of the frame

The frame is held together with a two-inch union Three one-half inch pipes are utilized to provide rigidity to the upright column. They are 39", 37", and 31" in length and are held in place by galvanized fence hangers and awning fittings, as shown.

The universal head consists of a 1½ inch reducing tee and a six inch piece of strap iron 1¾-inch wide by one-eighth inch thick. The latter is bent to a right angle and held in place through the tee by a bolt, which passes through a plug screwed into one side of the tee A wing-nut and lock washers complete the assembly. The camera is mounted on the top of the strap iron by means of a small bolt, which threads into the tripod fitting on the camera When the wing nut is tightened, the camera can be braked or locked securely.

A three quarter-inch pipe thirty inches long screws into the underside of the head tee by way of a one-inch bushing. This pipe passes down inside the column through a locking collar, which is equipped with a set screw. It also fits snugly into a plain washer at the top and another located midway up the column in the bell reducer It is this pipe that provides the rotating movement of the head and also furnishes the extension for raising the head to varying heights The locking collar holds the head in the raised position. A bolt threaded into the upper side of the pipe can be screwed in tight against the thirty-inch extension pipe to restrict movement or prevent it entirely.

The dolly rolls on three steel casters four-inches in diameter; a six-inch caster supports the seat assembly. The construction of the seat is quite simple It is made of a wooden frame, padded and covered with leatherette A one-inch floor flange is screwed to the underside of the seat, enabling the operator to install or remove it with a few quick turns. It also rotates freely while in use.

The pan head handle is made of ⅜-inch pipe, 12 inches in length, and fitted with a tricycle handle grip. The other end is attached to the head by means of an awning frame fitting.

You can easily duplicate this gas pipe dolly by following the details in the photos plus the description above ■

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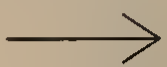

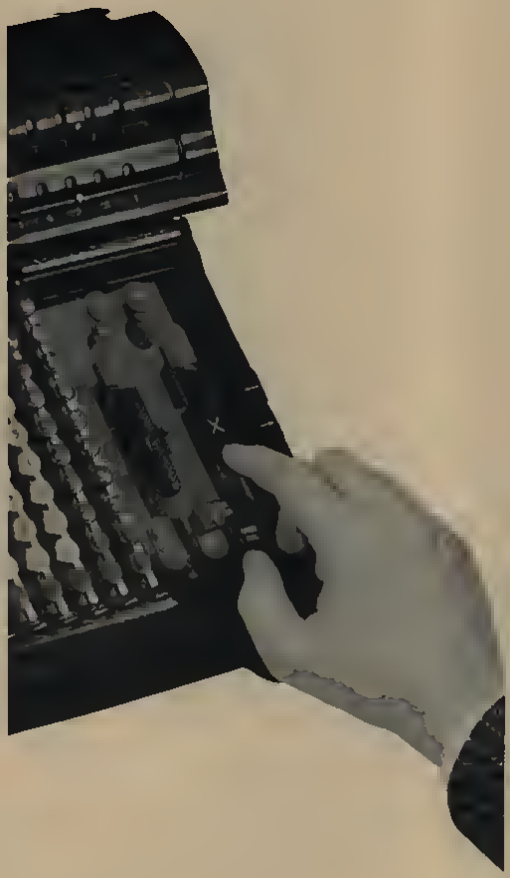

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ASC RECOMMENDATION

Continued from Page 171

the first travelogue-type Cinerama productions

A noteworthy change, which the new application of Cinerama has brought about, is the reduction in film travel speed through camera and projectors from 26 fps, established for the first Cinerama travelogue-type productions, to 24 fps. However, the pulldown stroke of 6 film perforations per frame remains unchanged.

Due to the limited number of Cinerama cameras presently in use, the data set forth in this recommendation are as yet not considered for standardization, but merely placed on record for informational reference

The following A.S.C. Recommendation No. 7 has been compiled by courtesy of Cinerama, Inc., through Messrs. Tom Conroy and Peter Gibbons and the liaison activities of our committee member, Ray Johnson, head of the Metro-Goldwyn-Mayer Studio Camera Department.

A.S.C. RECOMMENDATION #7
Cinerama Camera-Projector and Projector Aperture Dimensions and Angular Field Coverage Data

1. Scope

1.1 This recommendation specifies the aperture dimensions for a "three in one" special camera and respective projector arrangement using 35mm motion picture film with a perforation pitch of 0.187" and having a pulldown stroke of 6 perforations per frame.

1.2 The total three-frame area, the required optical printer aperture dimensions, and the arrangement to display the angular field coverage of the overall system are also presented

2. Dimensions

2.1 All dimensions and data for camera, printer and projector apertures as well as for focal length of lens and horizontal and vertical field coverage shall be as per attached Cinerama data sheet. (See illustration.)

2.2 Dimension "F" (0.062"), as indicated on the three-frame diagram, is a protective spacing for a finder marking to retain proper head clearance in all three cameras, which is necessary due to the deeply-curved screen arrangement of all three panels.

2.3 The unusual width of the camera

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apertures of 1.014," which extends into the film perforation area, permits overshooting in photography sufficiently to afford a selection of picture information in the negative that will insure release prints absolutely free of any possible lens fall-off effects in the extreme corners of the apertures

This is, of course, a must, due to the need for lacing the images in projection as inherent in the Cinerama system.

2.4 The taking and projection speed shall be 24 frames per second, with a pulldown stroke of 6 perforations (1.122") per frame or equivalent to 134.64 feet per minute

2.5 All necessary sound and control tracks are on 35mm full-coat magnetic film and are handled from separate equipment.

2.6 The dimensions of the negative raw stock to be used in these cameras shall be in accord with ASA PH 22.93-1953 pr PH 22.1-1953.

It is preferred to use Dubray Howell perforated film but Bell & Howell perforation can also be used, except for one camera

3. Usage

3.1 The negatives obtained from the above described camera apertures "A," "B," and "C" result in prints representing a total aspect ratio of 2.59-to-1 and are projected in a specific manner adjacent to each other on a deeply curved, louvered screen creating an audience participation effect that is enhanced by multichannel, stereophonic sound reproduction as presently known under the trade name *Cinerama*.

One of the important projects of the ASC's Research and Educational Committee is to establish recommendations for the standardization of apertures, also ground glass and camera finder markings for both theatrical and television film production, and also to provide recommendations for all wide-screen processes utilizing other than standard 35mm cameras. Preceding the foregoing recommendations for the Cinerama system, the Committee's recommendations for 65mm camera aperture dimensions was established and subsequently published in the October, 1961, issue of *American Cinematographer*. ■

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"FIRST PERSON" CAMERA TECHNIQUE

Continued from Page 171

Before shooting got underway at Pendleton, Phil Smith spent two days at the reformatory getting acquainted with the locales and learning the highly unique language peculiar to prisons This, together with the knowledge he had gained in counseling young offenders, permitted him to come up with a fairly comprehensive shooting script within three days. It was decided that we should have background sound in every scene to add to the realism of the pictured action

Since we had to maintain the illusion of the audience being a participant in the film, we could not use any cutaways, reverse angles, etc The use of "art" shots of slanted smoke stacks, etc, was taboo, for any departure from a purely "first person" technique would ruin the effect for which we were striving

The film opens cold with Judge Thomas J Faulconer of Marion County Criminal Court sentencing "a prisoner" — the camera — to the Indiana State Reformatory for a period of "not less than 10 nor more than 25 years" The gavel comes down, the camera quickly looks to the right sees the six-foot, six-inch tall deputy sheriff approach and snap the handcuffs in place. The "click" of the cuffs adds greatly to the presence of the scene. For this an assistant held his hands in the proper position under the lens to further create the illusion that the camera is the prisoner.

The prisoner then is led from the courtroom by the deputy, with all of the natural courtroom noises present In this way, from the very first frame, we established that the audience is the prisoner. The judge looked directly into the lens as he imposed sentence.

As the prisoner is transported to the Reformatory in the rear of the Sheriff's station wagon, we do a continuous take from the highway up to the door of the institution The deputy comes around the car and opens the door, the prisoner gets out, looks down briefly at its cuffed hands, then follows the deputy through the Reformatory door to the reception desk It then moves to the "dressing in" room where the prisoner surrenders his personal clothing for prison garb. This whole routine required ten f/ stop changes and about six focus ring changes as an assistant followed the camera out of the car through the door, up to the desk, and over to the "dressing in" room. We obtained a good take the second try, so we considered that "in the can." In most of the sequences we purposely shot an extra take, which usually was the one we used on the air for promotion spots prior to airing of the program

Following the opening sequence described above, the new prisoner is ushered into the office of Mr. Robert Heyne, the assistant superintendent So that we might show the entire institution quickly, it was arranged that several inmates would conduct the new arrival on a "tour" and in this way let him decide for himself whether he wanted to do "easy" or "hard" time—easy time being that which comes by good behavior, keeping out of debt, no "dealing," and hard time naturally, the opposite Mr Heyne asks the inmate to come in and sit down The camera, facing Mr. Heyne, moves over to a chair. After a briefing by Mr. Heyne as to this experiment of showing the inmate around, he is turned over to long-time inmates for the "tour" In this sequence, the aim has been to make the audience feel it actually has been the inmate . . that Mr Heyne has been talking to it personally.

One of the sequences in which our walking sound camera was used to good advantage was in the mess hall. Here inmates are permitted an adequate amount of food at each meal, but invariably there are one or two who can't resist snitching an additional weiner from the meat pan. This is punishable by disciplinary court action, which can mean "time" or days in the "hole" a cell without light, chairs or bed. To depict this we used several inmates to simulate a chow line By means of our "first person" camera technique, the audience follows the inmates through the chow line The man in front is seen to take an extra weiner off the pan and deftly tuck it under his tray. An officer sees this and hustles the man off with the camera into the "hole" to show the utter loneliness of this cell.

The cavernous acoustics of this cell as recorded on the sound track point up the punishment which confinement in this cell holds for prisoners. Our mike was tied to the barred door where the sounds of the guard opening first the steel window flap, the solid steel door, and finally the barred door, were recorded faithfully.

Throughout the filming of our show, we were given complete freedom by the Indiana Department of Correction and were cautioned only once when we requested clearance of a proposed sequence. We were asked not to shoot the mess hall when it was full of prisoners. Traditionally this has always been the most likely place for violence or riots to begin. One man drops or throws a tray and immediately the whole place can explode in a riot! For this sequence therefore, we staged our own chow line as described above.

Keeping in mind that the camera was the inmate and that we must never cut unless necessary, presented a challenge throughout the filming. We felt the audience might like to actually walk down a cell block or "range" as the men call it, talk to some of the men, ask them what their thoughts are, how they pass the time, and what they would like changed in the institution. Then we thought the audience might like to experience walking into a cell, lying down on the cot and in general place themselves briefly in the shoes of the inmate.

Because our camera was so portable we actually walked down the range, stopping to talk with various inmates as we traveled the full length of the cell block. To keep the conversation as informal and unrehearsed as possible we first went down the block and informed the men we were coming down with a sound camera and would ask them to answer freely any questions we might ask. We didn't cue them in any way as to what the questions might be.

As we moved along with the camera rolling, there was no profanity; answers were informative; the men spoke freely and gave a completely natural performance. We then walked into a cell, shooting two-mike-sound with the other inmate as we walked in. We sat down at his invitation, laid down on the bed as you might, holding the Auricon at the angle one's head would be if laid on a pillow or mattress. Phil Smith used a small

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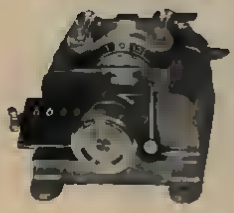

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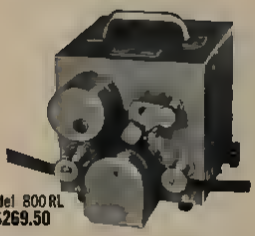

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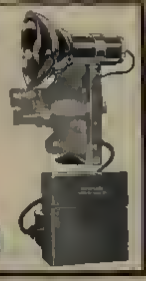

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neck mike to pick up the voice of inmate No. 84430. We also used a Sound Spot mike for picking up sounds and voices in the cells.

One of the natural problems in a penal institution of this size is "dealing." This is the practice of certain inmates of charging excessive rates of "interest" for anything borrowed or for the acquisition of items which normally are not available inside the walls. Cigarettes are the standard of currency. The inmates are paid a nickel per day and it takes a week's work to buy a pack of cigarettes.

If a prisoner is out of cigarettes and borrows a pack "until commissary day," the standard rate of interest is three for two, if paid within the week. Should the debtor be unable to repay the three packs at the end of the week, the debt automatically increases to five packs, and in two weeks increases to eight.

It is a simple matter for an inmate to get deeply in debt within a very short time, and men have had their skulls cracked for failing to pay their cigarette debts when due.

To dramatize this situation, we staged a scene in the dormitory in which the new inmate is briefed by a group of others on the problem of "dealing." Only the hands of the inmates were shown as they discuss the problem, and their words of wisdom were recorded on the sound track.

Because some of the the things the men revealed in this discussion were not generally known outside of the prison walls, they feared they would be set upon by fellow inmates if they were identified in the film. For this reason, we did not include in this scene the hands or arms of men having identifying marks such as tattoos, etc.

By shooting with the camera mounted on the shoulder brace, we were subject to a normal amount of jostling, which is natural to walking. But by using a 12mm wide angle lens, the effect was greatly minimized. The walking camera technique of recording was also used as we talked with inmates while walking around the inner compound area.

We used DuPont 931A reversal stock processed to ASA 250. This enabled us to shoot the entire production with available light only. In some of the darker areas we had to open to f/1.2, but most exposures were between f/2.5 and f/4. An assistant followed the camera and handled most of the lens changes and follow-focus problems, which were ever present, with f/ stops as low as f/1.2.

The film was edited, viewed by members of the Department of Correction, then with the addition of appropriate music and narration by WLW-1 News Director, Tom Atkins, was video taped. We knew from previous experience that the best procedure would be to video-tape the program and thus be able to do it over if we goofed. We obtained a satisfactory VT take after two tries.

After the show was televised we re-recorded the sound only from the video tape to 16mm sync tape. This was then combined with the original print in making a composite print, which was presented to the Board of Correction for use in the Reformatory's orientation program for new inmates.

There may be some who will doubt the feasibility of obtaining acceptable motion pictures with the camera handheld and while walking. But it can be done, if the cameraman uses care. In a production such as this, the first-person viewpoint could hardly be achieved in any other way. So well has the picture been received, we hope to follow it with others, using the same technique. ■

"OSCAR" NOMINEES

Continued from Page 167

Branch who then vote for not more than five productions in each category in the order of their preference. The ten productions receiving the greatest number of votes became the nominations for final voting for the Cinematography Awards. Up until now, all selections are made and voted upon by the Cinematographers. The final voting which decides the "Oscar" winners is restricted to active Academy members, among whom are a substantial number of cinematographers.

The twenty film productions named in the Preliminary Ballot for Cinematography Awards from which the ten Nominees have been selected follow, along with the names of their respective Directors of Photography:

"The Absent Minded Professor," (Walt Disney Prod.). Edward Colman, ASC.

"Babes In Toyland," (Walt Disney

Prod.), Edward Colman, ASC.

"The Children's Hour," (Mirisch/United Artists), Franz Planer, ASC.

"Claudelle Inglish," (Warner Bros.), Ralph Woolsey, ASC.

"El Cid," (Samuel Bronston/Allied Artists), Robert Krasker

"Flower Drum Song," (Univ.-Interntl./Ross Hunter). Russell Metty, ASC.

"Fanny," (Warner Bros.), Jack Cardiff.

"The Hustler," (20th Century-Fox), Eugene Shufton

"The Innocents," (Achilles/20th Century-Fox), Freddie Francis.

"Judgement At Nuremberg," (Kramer/United Artists), Ernest Laszlo, ASC.

"King of Kings," (Bronston/MGM), Milton Krasner, ASC; Franz Planer, ASC; and Manuel J. Berenguer, ASC.

"A Majority of One." (Warner Bros.), Harry Stradling, Sr., ASC

"One-Eyed Jacks," (Pennebaker/Paramount) Charles B Lang, Jr, ASC.

"One, Two, Three," (Mirisch/United Artists), Daniel L Fapp, ASC.

"The Outsider," (Univ.-Int.), Joseph W. LaShelle, ASC

"A Raisin In The Sun," (Columbia), Charles C Lawton, ASC

"Splendor In The Grass," (Warner Bros.), Boris Kaufman, ASC.

"Summer and Smoke," (Wallis/Paramount). Charles B Lang, Jr., ASC.

"West Side Story," (Mirisch/United Artists). Daniel L Fapp, ASC

"The Young Doctors," (United Artists), Arthur Ornitz.

This year the names of a number of non-Hollywood cinematographers appear in the preliminary list. Cardiff, Francis and Krasker are British. Ornitz and Shufton are New York cinematographers. And Berenguer, although a member of the ASC, is one of Spain's leading cameramen.

The Academy's 34th Annual Awards Presentation will take place in Santa Monica California, the evening of April 9th The event will be carried over the combined radio and television facilities of the ABC network and the Canadian Broadcasting Company, which will afford many of our readers opportunity to see or hear the awards presentations as they take place. The winners will be announced in our May issue. ■

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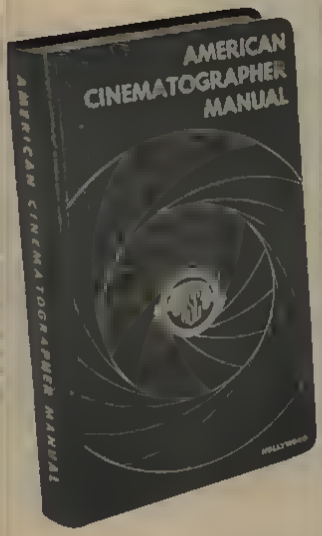

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CIRCARAMA

Continued from Page 163

tions. For example, if the operator wished to check the segment of the scene covered by the No 5 camera he would merely disengage the pin, swivel the No 1 camera around to the No 5 position, drop the pin into the appropriate hole and view the scene through the finder — after which he could quickly switch the No. 1 camera back to its proper position

To accomplish the considerable amount of aerial photography planned, a Fairchild C-119 "Flying Boxcar" was carefully adapted to specifications provided by Disney engineers. This plane has a single large bay located far forward, which is ordinarily used for dropping packages by parachute Inside a boom was installed which lowered the cameras down through the bay to a position far enough below so that no part of the plane would be picked up by the wide-angle lenses By means of a hand crank, the boom could be quickly retracted to bring the cameras back up into the plane during flight in event of malfunction, the need to inspect them or to reload them This, say Disney technicians, was a great improvement over the B-25 setup used earlier with the original Circamera camera unit.

With nine cameras shooting simultaneously it was necessary to carefully slate each roll of film for editing purposes. This was accomplished by placing a translucent plastic slate panel in a slot mounted in front of each lens and shooting the data lettered thereon. After sufficient footage had been run off to identify the rolls, the slates were removed and the cameras made ready for conventional shooting

Filming was done by an all-Italian crew headed by Director of Photography Elio Piccon Since none of these technicians were familiar with the equipment, however, Disney sent camera engineer Don Iwerks to instruct them in its operation and to provide proper maintenance during what turned out to be four months of intensive shooting. During this period a multitude of subjects were photographed in 28 major locations, which covered all of Italy (including the islands of Sicily, Sardinia, Capri and Ischia) and extended as far as Rhodesia, South Africa.

One of the most photographically interesting and challenging sequences in this production were shot deep within the Castellana Grotta, a vast natural cave very much like Carlsbad Caverns. The most magnificent area of this underground wonder is a large room called the Grotta Bianca, which opens off an ever-narrowing tunnel a mile and a quarter back in the mountain The end of the tunnel is so small that a man can just barely squeeze through, which meant that all of the camera and lighting equipment had to be broken down into the smallest possible units and carried in piece by piece This applied, as well, to a dolly and enough 2x4 boards to lay tracks for a fifteen foot dolly shot

In shooting with the dolly the camera was mounted on a column several feet above the platform so that the crew operating below would not be visible in the scene. Such dolly scenes have unusual depth and realism because elements in the foreground move at a different speed from those in the background, creating a three-dimensional effect Circarama 360-degree filming posed the additional problem of keeping the photo lamps out of scenes In most cases the dilemma was solved by concealing lamps behind the giant stalactites which studded the cavern Fortunately the grotto was adequately wired so that standard studio-type lighting units could be used.

In Northern Italy an unusually spectacular sequence was filmed at the Monza race track, a fast automobile course featuring banked turns. Arrangements were made to have a dozen cars available for the sequence A hole was cut in the side of a racing Ferrari so that a bracket could be welded on to support the camera pedestal. A major problem arose from the fact that the camera operator had to sit next to the driver in order to operate the equipment, but at the same time he could not be shown in the scene. The head grip proved to be the smallest man in the crew, so he gamely tied himself into a knot and managed to squeeze down far enough to be just barely out of camera range. The resultant action on the screen is breath taking. First the Ferrari overtakes cars and then several come screaming down to overtake it as it approaches a banked turn. To create the illusion of going faster the cameras were operated at half normal speed. The cars were actually travel

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ing about sixty miles per hour, and shooting them at 12 frames per second produced the illusion of very high speed. The effect on audiences was spellbinding.

In order to photograph a vast panoramic view of the shipyards in the harbor city of Genoa the cameras were hung from a huge crane hook suspended on cables far above the ground. The camera operator, holding batteries and the control box, was seated precariously in a "bucket" some thirty feet above the hook. The cameras were started rolling at a high level, then gradually swooped down to run along the decks of ships under construction. It required a very skilled crane operator to manuever the suspended cameras smoothly enough to avoid sway.

One of the most interesting sequences in this production was that which depicted an off-shore oil drilling rig in operation in the Adriatic Sea. For this the Circarama camera equipment was transported by small boat to the location and set up on a large crane mounted in the bow of a supply ship, which was anchored alongside the drilling rig. This crane could be swung completely around the

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Interesting vertical camera movement was made possible by a specially constructed hydraulic column. Its telescoping segments permitted the camera to be elevated from six to more than thirty feet in height. It was effectively used inside the houses of Parliament, near the leaning tower of Pisa and on the grounds of the Italia '61 Exposition itself, then under construction.

The opening sequence in the film began with scenes recorded by the Circarama camera suspended below the C-119 aircraft flying through clouds in the Italian Alps. As the plane emerged from the clouds, the beautiful snow-covered mountains were visible on all sides. Even though the cameras were subjected to a below-freezing windstream, they functioned perfectly. The camera plane then descended to show the city of Turin, the birthplace of the Italian unification.

Adverse weather was a constant problem, especially when covering certain events without fixed-time schedules. Many times the crew had to wait days until rainstorms passed. In Turin, interiors were photographed during the rainy period so no production time would be lost.

In Venice the cameras were mounted on a gondola for a trip down the Grand Canal and under the Rialto bridge. Permission was obtained to take the camera station wagon into famed St. Marks Square, where motor vehicles are ordinarily prohibited. With the cameras mounted on the platform on the station wagon roof a running shot was made, with the car traveling from the canal, into the square and back. The famous pigeons that inhabit the square scattered in every direction, adding pictorially to the scene.

When photographing the huge cathedral in Milan the camera assembly was broken down into small units and carried as far as possible by elevator, after which they were carried by hand to the top of the edifice and reassembled. Striking shots were then made showing the spires of the cathedral in the foreground and the city in the background.

Other pictorial sequences showed Fiat-built Italian jet fighters in aerial acrobatics around the cameras, an aerial trip over the rim of Mt. Vesuvius, the Colosseum in Rome, the Saluggia nuclear reactor plant, several Greek temples built about 450 B.C. on the island of Sicily, a plastics factory in Ferrara, a live telecast inside the RAI Television Studio in Rome and a steel mill in Turin.

A four-day air trip was made to Rhodesia expressly to film the giant Kariba Dam on the Zambesi River, which Italian interests were instrumental in building. The crew filmed it from the air, from the water, and on the ground.

Many of the aerial sequences were shot at very low levels, with the camera plane just skimming the treetops. When extreme low angle shots were needed on the ground, the Circarama camera unit was turned upside down so that the cameras shot down into the mirrors—just the reverse of normal shooting procedure. This put the cameras about a foot from the ground, but it also resulted in action that was recorded backwards on the film. Such scenes were optically reversed in the printing so the action matched footage shot with the cameras mounted normally.

The entire production was filmed in 16mm Ektachrome Commercial, which film was then shipped to the Eastman Kodak laboratories in Rochester, New York, for processing. The processed film was then sent to the Disney Studios in Burbank, Calif., where black-and-white edge-numbered workprints were made. The latter were reviewed on a set-up of three projectors running in interlock so that three strips of film could be checked at the same time. The final editing of the picture was done in Italy and the selected scenes sent back to the Disney studio where they were blown up to 35mm color by the same process which Walt Disney has used so successfully in the production of his nature films, most of which are photographed in 16mm color.

To project this Circarama production, the Fiat Corportaion erected a circular theatre at the Italia '61 Exposition in which the audience stood or walked around in the center and watched the picture unfold on a circular 9-segment screen surrounding them. ■

"THE MAGIC SWORD"

Continued from Page 159

camera constantly cut from high to low angles. It was also important that the dragon remain the same size in relation to its human adversary throughout the sequence. When the dragon was shown alone, cinematographer Vogel was careful to select camera angles that would faithfully duplicate the point of view of the man fighting the beast.

Important, also, was the continuity of shadows between the miniature and live action scenes. In working with miniatures, Gordon makes it a point to establish shadows in the live-action scene, then carry them through into the miniature scene, thus creating one more powerful element of visual continuity.

An interesting effect involved bringing to life six stone images of knights who had presumably been ossified by an evil sorcerer centuries before. The shot of the "stone" knights was achieved by taking a frame of the live scene showing the knights standing in a row and, through a series of photographic processes, producing an extremely high-contrast black and white print of the scene having almost the quality of a line drawing. Shading was then carefully added to create the illusion of three-dimensional stone figures. Then, by means of a dissolve precisely matched to the original scene, the knights appeared to take on life, color and movement.

The effect which presented the biggest challenge to Gordon and cinematographer Vogel, and which required the greatest amount of time to create, had to do with the appearance of disembodied demon heads floating in space in a haunted cavern. Gordon had speculated that the desired weird effect could be produced by painting plaster models of shrunken heads and death masks with flourescent paint and then illuminating them with ultra-violet or so-called "black" light. Here the problem was to get the paint to glow brightly enough to register on film. Since a "floating" effect was required, it was impossible to undercrank the scene at less than 20 frames per second—and even with an exposure of f/2 it was necessary for Vogel to pour a tremendous amount of the barely visible "black" light into the scene in order to get the flourescence to show up on film.

After the heads had finally been successfully photographed in a frosty green glow, the problem remained of superimposing them, properly balanced, over the background scene. This was done in the optical printer, and a great deal of experimentation with printer lights and filters was necessary to get the heads to burn through with just the right degree of ghostly translucence. The resultant sequence on the screen, especially when accompanied by weird sound effects, creates a spell of flesh-crawling horror.

The most costly sequence to shoot took place in a fog-shrouded forest. Built on the sound stage at the Samuel Goldwyn Studios the set was a tangle of peculiarly stark, tortured-looking trees unlike any flora on earth. The "trees" were actually upended cypress stumps with "branches" formed by the roots writhing into the air and seeming to clutch at the characters as they rode by on horseback.

For another weird scene, a hole was cut in the floor of the stage and a subterannean tank was filled with evil-looking liquid whipped up by underwater agitators to create a flesh-eating vortex. When a hapless character fell into this churning acid, he turned into an eroded mummy-like blob. The chemical fog on the set was so dense that horses taking part in the scene refused to go through it. The stage had to be cleared of smoke so that the horses could be led through the path of action in order to build up their confidence prior to actual shooting of the sequence.

In approaching a suspense-fantasy subject such as "The Magic Sword," Bert Gordon starts with a story idea that naturally demands special effects—although he is careful never to distort a plot line purely to include such effects. In researching backgrounds for this film he was amazed to find that the basic legend is almost universal throughout the world. England, Scandanavia, Russia, Egypt and China share variations of the story—with the hero always called George and the monster always a dragon.

The dragon, then, was a "must" as far as special effects were concerned. By extending the plot to require George to overcome seven curses prior to combat with the dragon, many other entirely valid situations were created to tellingly feature special effects. Also, throughout the picture, various sorcerers keep looking into magic mirrors and pools in order to get what appears

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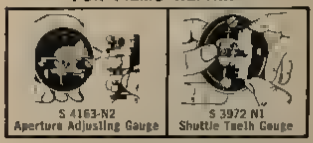

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In designing his effects, Gordon rarely uses only one technique at a time. He prefers to use many elements together — perhaps a multiple split screen, miniatures and a traveling matte all in the same scene. He uses standard processes together with those he has developed himself. If an effect is called for which has no known technology, he will create a new method for achieving it. Although he started out on a shoestring years ago, Gordon's special effects today are thoroughly professional and so expertly wrought that their methods defy detection by any but similar experts highly trained in the field. He feels that several different types of effects used in the same scene tend to reinforce each other and strengthen the overall illusion. He uses standard rear projection and before-the-lens mattes very little, preferring to manipulate his effects in the optical printer.

He makes very sure that the sets for his pictures are carefully designed to accommodate the effects that will be used in them. When the sequence calls for over-sized or under-sized characters he makes sure that there are elements in the set which will serve as standards of comparison as to size.

Whereas many film-makers specializing in fantasy limit themselves to photographing miniatures straight on, Gordon treats miniatures in the same way that he would live players—using a variety of angles, over-shoulder shots and closeups. He feels that this creates added realism, ties the effect in more closely to other visual elements, and gives the audience less opportunity to pick the effect apart.

"In a straight type of picture you can get away with almost anything," he points out. "But in an out-and-out fantasy your audience is looking for things to jump on, defying you to fool them. Because they have this chip-on-the-shoulder attitude you have to make sure that every effect you use is as good as you can possibly get it. It is for this reason, also, that I engage the very best technicians I can get—for example, A.S.C. cameramen like Paul Vogel, Ernest Haller and Joseph Biroc. I learned long ago that there's no substitute for talent."

Bert Gordon's film career actually began when he was a student at the University of Wisconsin where he put his photographic hobby to use filming and producing the school's 16mm newsreel. When he found that it was good enough to become a regular weekly release in local theatres, he began developing his editing technique as well. After a hitch in the Air Force, he talked his way into a contract to produce a series of TV commercials for Chevrolet. The fact that he had never made a sound film slowed him down only momentarily. He made an expensive long-distance call to the Chicago lab which had been processing his footage and gleaned enough step-by-step know-how over the phone to take a stab at it. Then with the help of his wife, Flora, he cut and dubbed the resultant lootage on a card table in their living room. The sponsor was delighted with the result.

In the meantime, Gordon had built his own animation stand and had acquired a great deal of knowledge about special effects from articles he had read in *American Cinematographer* and *Popular Photography* magazines. He was doing quite well producing TV commercials, but he yearned to produce feature films instead. To accomplish this meant moving to Hollywood —so the family, strictly on a gamble, pulled up stakes and headed west. In the film capital he rang what seemed like a million doorbells in search of a job. His persistence finally paid off when he was made production supervisor of the "Racket Squad" TV series.

In 1954 he got his chance to co-produce and direct his first suspense fantasy feature, "King Dinosaur." Made on a budget of less than $20,000, this picture was replete with Gordon's own special effects and started him on a production career that has paid off handsomely ever since.

In his early 16mm days, Gordon's wife worked right alongside him, pushing the dolly while he operated the camera. She is still at his side sharing the work and his unabated enthusiasm for film. Only now, she has the title of Assistant Supervisor. Technical Effects. She coordinates all of the visual effects and keeps important records of all the set-ups, the types of lenses used, distances from camera to subject, etc.

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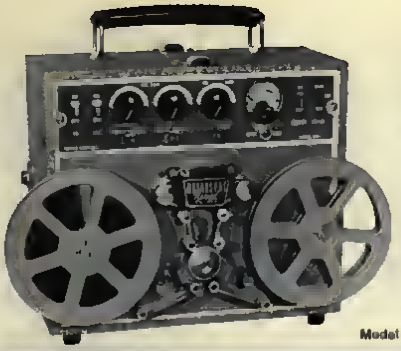

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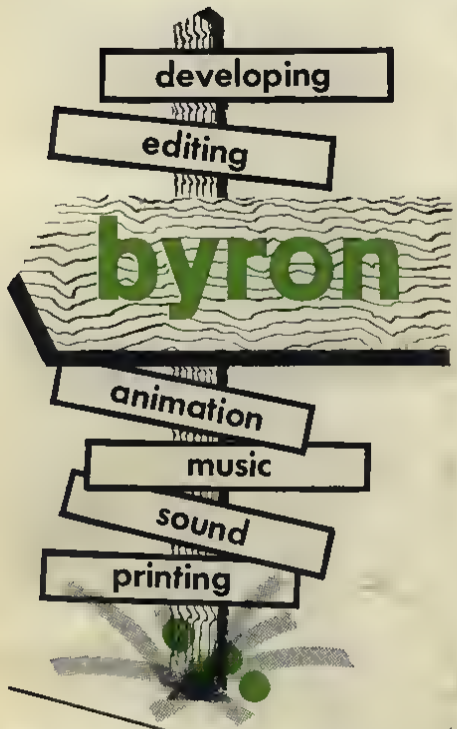

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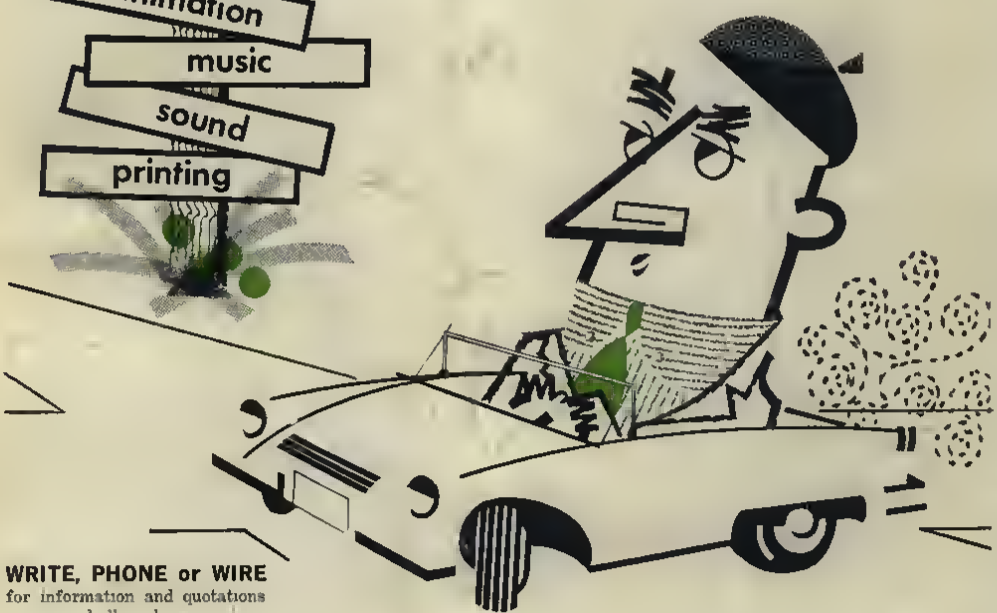

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